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The National Geographic Magazine

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Honorary Editor: JOHN HYDE

Honorary Associate Editors

A. W. GREELY W J McGEE ELIZA RUHAMAH SCIDMORE

CONTENTS

	PAGE
INTRODUCTORY. THE EDITOR	1
RUSSIA IN EUROPE. HON. GARDINER G. HUBBARD	3
THE ARCTIC CRUISE OF THE U. S. REVENUE CUTTER "BEAR." With illustrations. DR. SHELDON JACKSON	27
THE SCOPE AND VALUE OF ARCTIC EXPLORATION. GEN. A. W. GREELY	32
GEOGRAPHIC LITERATURE	40
PROCEEDINGS OF THE NATIONAL GEOGRAPHIC SOCIETY	46
NORTH AMERICAN NOTES	48

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THE

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NOTICE TO MEMBERS

BINDING.—The following favorable terms have been secured for binding THE NATIONAL GEOGRAPHIC MAGAZINE: Full cloth, 40 cents per volume; half roan or half American Russia, 50 cents; half morocco, 80 cents; full roan, $1.00; full morocco, $1.60. Choice of black, blue, or red is offered, except as to American Russia, which is in red only. Until March 1 volumes will be received by the Secretary, at 1515 H street N. W., Washington, for binding, on condition that the style and color required are distinctly stated, and that the cost, including return postage or express charges, is remitted at the same time. Odd numbers necessary to complete baek volumes can in many cases be supplied.

XUM

National Geographic Society,

OFFICE, 1515 H STREET,

The January number of the NATIONAL GEOGRAPHIC MAGAZINE, the first of the new series, is sent to all members of the Society, but the attention of members who are in arrears is respectfully called to the provisions of the by-laws relating to the payment of dues, as follows:

The initiation fee for active members shall be two dollars, payable upon notice of election. The annual dues of active members shall be five dollars, and of corresponding members two dollars. The fiscal year and season of the Society shall begin on the first day of June and end on the thirty-first day of May, and the annual dues of members shall be payable on or before the last day of October, or, in the case of new members, within thirty days after election. Annual dues may be commuted and life membership acquired by the payment of fifty dollars.

These dues are small, in view of the work that the Society is doing, and prompt payment is essential in order to meet current expenses of lectures and publications.

In the absence of any formal resignation, members' names are kept on the rolls of the Society, as membership does not lapse at the end of each season.

The Technical Meeting of January 10 will be held in Metzerott Hall, and will be devoted to a paper by Mr. Wm. Eleroy Curtis, on "Venezuela: her Government, People, and Boundary," with lantern-slide illustrations; the Board of Managers has decided, in view of the general interest in the subject, to authorize the sale of a limited number of tickets to this lecture, for 50 cents each, at Metzerott's music store.

Members are respectfully urged to obtain subscribers for the MAGAZINE, which will be made the leading authority on American geography, as well as an attractive, interesting, illustrated periodical, published promptly the first of each month.

WASHINGTON, D. C., *December* 27, 1895. EVERETT HAYDEN,
Secretary.

NATIONAL GEOGRAPHIC SOCIETY,
WASHINGTON, D. C.

Membership.

Honorary, 11. Active, 967. Corresponding, 259. Total, 1,237.

The List of **Honorary Members** includes
The President of the United States.

The List of **Active Members** includes
The Vice-President of the United States, twenty-two members of the Diplomatic Corps, one member of the U. S. Supreme Court, two Cabinet Officers, six Senators, five members of the House of Representatives, the Secretary of the Smithsonian Institution, the presidents of the Catholic University of America, Columbian, Georgetown, and Johns Hopkins Universities, and the following, arranged in numerical order, according to membership:

Cosmos Club,	174
Faculties of Colleges and Schools,	80
Loyal Legion (D. C. Com'd'ry),	79
Geological Survey,	63
Physicians,	59
Sons of the American Revolution,	59
Navy,	58
Board of Trade,	56
Lawyers,	56
Army,	49
Coast and Geodetic Survey,	39
Agricultural Depart., inclu. Weather Bu.,	31
Clergy,	24
The Press,	19
Civil Service Commission,	12
Smithsonian Institut'n, inclu. Bu. Ethnol.,	11
Hydrographic Office,	9
Weather Bureau,	6
Naval Observatory,	5
National Museum,	5

December 27, 1895.

PROGRAM FOR JANUARY, METZEROTT HALL.

JAN. 3 —**The Geographic Development of Universities**.....**Dr. D. C. Gilman, President of Johns Hopkins University**
" 10*—**Venezuela: her Government, People, and Boundary**.....**Wm. Eleroy Curtis**
" 17*—**Explorations in the Far North**.....**Civil Engineer Robert E. Peary, U. S. Navy**
" 24 —**Joint Meeting with the American Forestry Association**.....**Introductory Address by Hon. J. Sterling Morton, Secretary of Agriculture,** followed by addresses by other authorities on American forestry.
" 31*—**The Geography, People, and Resources of Costa Rica**.....**Gen. Richard Villafranca, Commissioner-General to the Atlanta Exposition**

*LANTERN SLIDE ILLUSTRATIONS.

XUM

RUSSIA

IN EUROPE

SCALE OF MILES
0 50 100 150 200 250
Railroads

ARCTIC OCEAN
BALTIC SEA
BIELOE MORE OR WHITE SEA
BLACK SEA
Sea of Azov
Kara Sea
Gulf of Bothnia
Gulf of Finland
Gulf of Archangel
Gulf of Onega
Gulf of Kandalak
Gulf of Tcheskaia
Gulf of Perekop
Gulf of Taganrog
Sea of Azov
Caspian Sea
Lake Ladoga
Lake Onega
Lake Peipus
Lake Ilmen
Lake Enara
Lake Imandra
Lake Seliguer
Lake Elton
Lake Inder
Lake Manitch
Aral Sea
Waigatz Id.
Aaland Ids.
Dagoe
Oesel
Gothland
Kolguev I.
Waranger Fd.
Kola Peninsula
Kaninskaia Pena.
C. Kanen
C. Sviatoi
C. Onega
C. Sinetz
C. Sisolsk
C. Aitodor
C. Apsheron
Mouths of the Petchora R.
Mouths of the Volga R.
Mouths of the Ural R.
Mouths of the Danube
Mouths of the Dnieper
Mouths of the Don
Mouths of the Kuban
Mouths of the Terek
Mouths of the Kur
Mouths of the Rion
Arctic Circle
Ural Mountains
Caucasus Mountains
Valdai Hills
Crimea
Asia Minor
Armenia
Mt. Ararat
Erzerum
Trebizond
Sinope
Constantinople
Bosporus
Dardanelles
Erekli
Anaklia
Batoum
Kutais
Poti
Sukhum Kale
Derbend
Baku
Petersburg
Moscow
Archangel
Novgorod
Nijni Novgorod
Kazan
Astrakhan
Saratov
Samara
Simbirsk
Penza
Tula
Kaluga
Smolensk
Minsk
Warsaw
Vilna
Grodno
Riga
Reval
Helsingfors
Abo
Wiborg
Tornea
Kemi
Uleaborg
Kajana
Kola
Enontekis
Muonioniska
Jukogorska
Mezen
Onega
Kholmogory
Novo Dvinsk
Veliki Ustug
Ustsysolsk
Ust Ussa
Pustozersk
Obdorsk
Berezov
Tobolsk
Tiumen
Ekaterinburg
Perm
Viatka
Kazan
Nijni Novgorod
Vladimir
Moscow
Tula
Orel
Kursk
Kharkov
Poltava
Kiev
Ekaterinoslav
Kherson
Nikolaiev
Odessa
Simferopol
Sevastopol
Balaklava
Kertch
Yenikale
Kopul
Stavropol
Ekaterinodar
Alexandrovsk
Tiflis
Kutais
Baku
Derbend
Astrakhan
Orenburg
Ufa
Chelyabinsk
Tobolsk
Tiumen
Irbit
Kungur
Perm
Nolinsk
Glazov
Okansk
Solikamsk
Petrozavodsk
Archangel
Veliki Ustug
Ustsysolsk
Mezen
Pechora R.
Petchora R.
Obdorsk
Berezov
Tobolsk
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Ekaterinburg
Perm
Viatka
Kazan
Nijni Novgorod
Vladimir
Moscow
Tula
Orel
Kursk
Kharkov
Poltava
Kiev
Ekaterinoslav
Kherson
Nikolaiev
Odessa
Simferopol
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Balaklava
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Yenikale
Kopul
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Irbit
Kungur
Perm
Nolinsk
Glazov
Okansk
Solikamsk
Petrozavodsk

10 15 20 25 35 40 45 50 55
65 60 55 50 45 40
25 30 35 40 45 50
Longitude East from Greenwich

FROM THE INTERNATIONAL CYCLOPAEDIA, BY PERMISSION OF DODD, MEAD & COMPANY, PUBLISHERS.

THE

National Geographic Magazine

VOL. VII JANUARY, 1896 No. 1

INTRODUCTORY

With the present number the NATIONAL GEOGRAPHIC MAGAZINE commences a new series and makes its first appearance as a monthly publication. What shall be its precise scope and function has been the most difficult question its editors have been called upon to determine. From no other point of view is the interdependence of the sciences so manifest as from the geographic. Geography in its broader sense has to do not merely with the physical features of the earth's surface, but with the distribution of animal and vegetable life, with political divisions and subdivisions, with the growth and movement of population, with the progress of human society, with the development of the earth's natural resources, and with commercial intercourse between nations. To cover successfully so vast and so diversified a field is entirely beyond the capacity of any single periodical publication. Either it must restrict itself to physical geography and become largely technical, or it must content itself with briefly chronicling the more notable additions to geographic knowledge in those parts of the world in which its readers are less directly interested, and with becoming more especially the exponent of the geography—physical, political, and commercial—of the continent with which its publication more particularly identifies it. And surely in the case of an American publication this is a sufficiently broad field. There are vast regions of the New World that must continue to tempt the venturesome explorer for many years to come. Here, too, on this continent "the rudiments of empire are," in the words of one of our own poets, "plastic yet and warm;" political problems are being wrought out on an unexampled scale, a fusion of races hitherto without parallel is going on, and the bounty of nature is being poured out with a more lavish hand than in any other equally extensive portion of the globe. It will accordingly

be the aim of the NATIONAL GEOGRAPHIC MAGAZINE to be American rather than cosmopolitan, and in an especial degree to be National. There is hardly a United States citizen whose name has become identified with Arctic exploration, with the Bering sea controversy, or with the Alaska boundary dispute who is not an active member of the National Geographic Society and a contributor to the pages of its magazine. In the Army and Navy the Society is also well represented, and from the gallant and accomplished officers of those important branches of the service it receives from time to time much valuable information. The principal officers and experts of the different scientific bureaus of the Government—the Geological Survey, the Coast and Geodetic Survey, the Smithsonian Institution, the National Museum, the Hydrographic Office, the Naval Observatory, the Weather Bureau, the Bureau of American Ethnology, the Biological Division of the Department of Agriculture, and others—have always been among the most active members of the Society, and the great work that is being done by these several bureaus—a work that is at once the wonder and admiration of foreign scientists—will be regularly discussed in the pages of the magazine by those who are in close touch with if not actually engaged in it. Turning from our own country to the sister republics of the two Americas, we find almost all of them connected with the Society in the persons of their diplomatic representatives, and through the cordial coöperation of these gentlemen the magazine will receive from time to time the latest and most authentic geographic intelligence concerning countries in which the people of the United States are now taking an exceedingly keen and friendly interest. That the magazine will not reach at a single bound the high standard at which those responsible for its management are aiming will scarcely be a disappointment either to its editors or its readers. The measure of its success, however, will not wholly depend upon the efforts of those conducting it. Nothing less than the generous support of that numerous class of the community which is interested in one or another of the different branches of geographic science will enable the National Geographic Society to make its magazine everything that it ought to be and properly equip it for the discharge of its function as THE MAGAZINE OF AMERICAN GEOGRAPHY. To possess a knowledge of the conditions and possibilities of one's own country is surely no small part of an enlightened patriotism, and to the patriotic impulses of the American people no appeal was ever made in vain.

XUM

RUSSIA IN EUROPE*

By Hon. Gardiner G. Hubbard, LL. D., *President of the National Geographic Society*

England, the United States, and Russia have each made greater territorial acquisitions during the present century than all the other countries of the world together. In the case of the British empire, these have been larger and more important than those of either the United States or Russia. The United States and Russia have only annexed contiguous territory, save Alaska. Russia when first enrolled among civilized nations, in the time of Peter the Great, had no outlet to any ocean except the Arctic, and consequently no possibility of a navy or of commerce. Since then she has extended her dominion northwest to the gulf of Bothnia and the Baltic sea, building St. Petersburg on the marshes of Finland, south to the Black and Caspian seas, southeast to Afghanistan and China, and in the extreme east to the river Amur and the Pacific.

The acquisitions of the Russian Empire within this century are greater in extent and importance than the whole of European Russia before that time. Her frontier has been advanced toward Stockholm 630 miles, toward Berlin 700 miles, toward Constantinople 500 miles, toward India 1,300 miles. Her territory in Europe comprises more than one-half of that continent; yet with all her great empire she has only three ports, and these on the Black sea, open to navigation throughout the year, the others being closed by ice from three to six months, while from those on the Black sea ships of war have no right to pass into the Mediterranean. Until within one hundred years southern and southeastern Russia were infested with hordes of Tartars and Kalmucks, who overran nearly one-third of Russia—wandering tribes without fixed habitation or permanent government, "marauders, slave-dealers, and vagabonds," who "came, conquered, burned, pillaged, murdered, and went." The first step of Russia when she determined that her empire should belong to the civilization of Europe was the subjugation of these tribes. This has been accomplished by compelling the Tartars

*Annual address delivered May 10, 1895.

and Kalmucks to live within fixed and permanent boundaries, by enrolling the Cossacks into bands of cavalry, and substituting the agricultural for the nomadic life. Many of the tribes, unwilling to give up their wandering life, retired beyond the Caspian sea, and from those regions continued their inroads upon the Russian settlements. Russia, for her own protection, was again obliged to subdue these unruly tribes, and thereby to extend her dominion still farther to the east, until it finally reached a barrier in the Pamir and the mountains of Afghanistan.

PHYSICAL FEATURES OF RUSSIA.

If nature ever made the boundaries of a nation, it determined those of Russia—the Arctic ocean on the north, the Ural mountains on the east, the Black and Caspian seas on the south, and the Baltic sea on the northwest, with Siberia and Trans-Caspia as the natural extension of her empire.

In August, 1881, I left London on a trip to Russia, passing through Antwerp, Berlin, and Königsberg to St. Petersburg; thence to Moscow and Nijni Novgorod. From Moscow I went southeast through Russia, over the Caucasus to Tiflis, in Asia; thence to Batoum and Sebastopol, on the Black sea, and from the Crimea north to Moscow. In all this journey of 3,500 miles we crossed no range of mountains, we saw no hills more than five or six hundred feet in height until we reached the Caucasus. It was one broad, level plain from Antwerp to Königsberg, 150 miles in width, bounded on the north by the Baltic, on the south by the Erzberg and the foothills of the Carpathian mountains. Entering Russia, the plain widens, extending northeast 1,800 miles along the coast of the Arctic ocean to the Ural mountains, south to the Black sea and the foothills of the Caucasus, and southeast 3,000 miles to the mountains of Afghanistan. My letters written from the foothills of the Caucasus say: "Only think of traveling from one end of Europe to the other over a plain, neither hill nor mountain in all the route, with scarcely a new scene from morning to night or from one day to another. After two days' and nights' traveling nearly due south from St. Petersburg we have not reached as far south as St. Johns, in Newfoundland."

"Yesterday our route was over great plains with rich black earth, occasional forests, pretty well watered; today, broad level steppes with sandy soil, without a tree in sight. We are trav-

eling through the land of the Cossacks; men and women at every station have Asiatic faces, and wear generally a goatskin coat, with the fur inside, fastened by a girdle. No trace of cultivation, except on the streams which we cross from time to time. These streams flow in low, narrow valleys; the road descends two or three hundred feet into the valleys by curves, and then ascends to the plain to save grading, and this affords the only variation in the scenery."

In this great plain there are five distinct zones of land: The frozen, the forest, the black, the agricultural, and the barren steppes. The black zone, near the center, is the most fertile and thickly inhabited. To the north the country grows gradually less fertile, passing through the forest zone to the Arctic zone, entirely destitute of vegetation. To the south of the black zone the country likewise grows less and less fertile, passing through the agricultural zone to the dry and sandy steppes, entirely destitute of vegetation.

From 200 to 300 miles in width, the black zone extends from Austria, a little north of east, across Russia, over the Ural mountains, far into Siberia. It resembles our prairies; has a rich, black soil of great depth, unsurpassed in fertility. Réclus says that "all traces of glaciers disappear where the black lands begin and the forests end, while the contrast between the flora of the two regions is complete." American geologists believe that the glaciers extended over the whole of Russia to the Black sea, and that the great level plain which constitutes Russia is due to aqueo-glacial action.

In the northern part of the black zone are occasional groves of oak and birch; traveling north these are succeeded by forests of hardwood, with occasional evergreens. Gradually the hardwood disappears; then we enter the forest zone, pines and evergreens. About one-third of Russia is forest. In this region are immense districts, where the only roads are rivers flowing through interminable walls. Then comes a land of rocks, lakes, and swamps, with isolated and snowy masses rising above the forests and peat-beds. This is the Arctic zone, and here is Finland, a region of lakes, over eleven hundred in one province; the great forests of pine become small evergreens, reaching a height of 25 feet in 100 years, gaining their maturity in 300 years. Gradually they become yet smaller and are of slower growth. The giant of these forests is the willow, which sometimes reaches

a height of 6 inches. A little farther north the rainfall exceeds the evaporation and river-flow and forms a woodless plain of small lakes and morasses, called tundra, on which neither man nor beast could set foot if the ground were not frozen to the depth of very many feet; in summer melting a little more than one foot. Into this treeless region in summer come innumerable birds of different kinds to build their nests and hatch their young. In autumn they fly south—some to the Crimea, some to Asia, others into Africa. So level is the country that in their flight they rarely reach a height of 500 feet above sea-level. This is the land of the Samoyeds, where agriculture is impossible, and the natives live by fishing and hunting. Still farther north, yet in Russia, is Nova Zembla, 75° north latitude, where no animal life exists; but even here, in this land of ice and snow, several hundred species of lichen have been found. Though the surface of the water is frozen for about nine months in the year, yet fish and animalculæ abound, the temperature of the fish varying with the water in which they live, here only a little above the freezing-point.

Returning to the black zone, near the latitude of Moscow, and traveling south, first the hardwood gives place to the rich prairie land; then we reach the agricultural steppe, a treeless land, susceptible of cultivation, though lacking in the rich, deep loam of the black zone. Farther south lie the vast barren steppes, in the west a sandy desert, in the east a vast saline plain, formerly the bed of a great lake, of which the Caspian and Aral seas formed a small part. This is the genuine steppe, a country level as the sea, without even a gentle undulation or a particle of cultivation—neither tree nor bush, nor even a stone, to diversify the monotonous expanse. The inhabitants lead a nomadic life, like those of the Arctic region.

The very diversity of the country and the occupations of the people of Russia tend to unity, for the north needs the grain of the south, and the south requires the wood of the north. Middle Russia, that great center of manufactures, without the north and south would lack markets for its manufactures.

MOUNTAINS.

The greatest extent of upland in Russia is near Great Novgorod, southwest of St. Petersburg, where the Valdai hills rise from 800 to 1,000 feet.

In the east the Ural mountains separate Russia from Siberia, a range of plateaus rather than mountains, attaining an elevation of from 3,000 to 5,000 feet, extending from the Arctic ocean south about 1,200 miles. They are rich in metals—gold, precious stones, iron, and coal—with large and productive mines. In the southeastern part of Russia are the Caucasian mountains, separating Europe from Asia and running from the Black to the Caspian seas, about 600 miles in length and 150 in width. The culminating point is mount Elburz, 18,572 feet above the sea level, 3,000 feet higher than Mont Blanc. Near the center of the Caucasus is mount Kazbek, 16,552 feet, 1,000 feet higher than Monte Rosa. These mountains are clothed with snow for several thousand feet, and down their sides flow many glaciers. The Russians have so little love of scenery that they rarely make excursions among these mountains or ascend Elburz, which, though half a mile higher than Mont Blanc, is much easier of ascent, because there is only a steady climb for several hours over smooth, frozen snow.

Near Kazbek is the pass of Dariel, 8,000 feet in height, the only carriage road through these mountains. In ancient times this pass, called the "gates of the Caucasus," was guarded by Tartar towers, which still stand, thousands of years old, overlooking the pass. Until Russia conquered the northern part of Persia, the two sides were never held by the same power.

At the southeastern extremity of the Caucasus, on the Caspian sea, at Baku, there stands an old temple, where for centuries a beacon was kept burning by the fire-worshipers of India and Persia. The people in the olden time believed that the fire was supernatural—the gift of the god of fire. Modern science shows that it came from oil wells, and modern enterprise has here developed a great industry. The old temple of the fire-worshipers remains; on one side of it are huge derricks, pumping the oil; on the other, a great stone embankment, stretching over a mile along the coast, where steam and sailing vessels and long trains of railroad cars load with oil. Here is a population of fifty thousand, where twenty years ago were less than fifteen hundred. The Parsee tending the fire symbolizes the past; the Russian with his oil wells, his railroads, and steamboats, the future. The petroleum is used for fuel on the Caspian and Volga steamers. It is sent up the Volga and its branches to all parts of Russia and is carried by rail from Baku to Batoum, on the

Black sea, and thence by steamer to different parts of Europe. It has superseded American oil in Russia and competed with it in Vienna and Berlin until consolidation of the American and Russian interests was made. In 1893 Baku alone produced 33,104,000 gallons, a production largely exceeding that of either of the two great oil-fields of America.

Another range of mountains, or rather a continuation of the Caucasus, runs across the Crimea. This range protects the coast on the southeastern side from the cold winds of the north, and here are Livadia and Yalta, where the late Czar died—the only places in all Russia where there is an equable climate like that of Nice and Mentone. The road from Livadia crosses this chain of mountains through a pass about 3,000 feet in height, with views of the Black sea resembling those of the Mediterranean near Amalfi, and then descends to Balaklava and Sebastopol, where the winter winds from the Arctic blow unbroken by any mountains.

RIVER SYSTEM.

In the plateau of the Valdai the principal rivers of Russia rise. The Volga and its branches flow east and south to the Caspian sea; the Dnieper and Don to the Black sea; others northwest to the Baltic. Russia is so level that its rivers are slow and sluggish, with little water except during the melting of snows. They are connected with each other and with the gulf of Finland and the Arctic ocean by canals, so that intercommunication between different parts of the country is easy in the summer. The rivers that empty into the Arctic ocean and into the Black and Caspian seas have several mouths, so that navigation from the river into the sea is very difficult.

There are 33,000 miles of navigable rivers, 81,000 vessels of various kinds, and 138,000 rafts.

CLIMATE.

In its climate, as in extent, conformation, and population, Russia differs from the other countries of Europe. These are bathed by the warm winds from the Atlantic and Mediterranean. The moisture of these winds is rapidly condensed as they pass over the Alps and Carpathians and the mountains of Norway and Sweden, the source of numerous rivers, and affording an abundant supply of rain to western Europe. These winds then

XUM

blow over Russia, but they have become dry, without moisture; consequently the rainfall of western Russia is only about twenty or twenty-five inches, or half that of western Europe. This steadily diminishes toward the east, leaving the steppes of eastern Russia dry and barren, unless irrigated. The temperature diminishes rapidly from the west to the east. North of 50°, or far south of Moscow, it diminishes more rapidly from the west to the east than from the south to the north.

Over the vast plain of Russia the winds blow without obstruction. The cold winter winds bring from the Arctic ocean the temperature of the polar regions, while the warm summer winds from the Black sea convey the temperature of the torrid zone. Spring and autumn are almost unknown, for as soon as the frost is gone, about the middle of April or the first of May, the wheat and grain fields and the foliage of the trees burst forth with a rapidity unknown in our country.

RACES.

Although Russia is one of the most uniform and level of countries, yet few are occupied by as great a variety of races. Southern and middle Russia were for centuries the great highways over which vast numbers of barbaric hordes—Scythians, Huns, Mongols, and Vandals—passed from Asia through Russia into Italy, Hungary, Poland, Germany, and by the Dariel pass over the Caucasus into Asia Minor. Some of each of these tribes remained; all left their impress upon Russia. While these tribes were overrunning Russia the Slavonians came, today the predominant race, the last of the Aryans to leave their original home, and these retained when they entered Russia many Asiatic habits. In the fifth and sixth centuries they probably occupied the region now known as "Little Russia" and were the germ of the great Russian empire. When the Slavonians entered Russia they found Mongols, Finns, and Huns; with some they intermarried; others they pushed into northern and Arctic Russia, a region without temptation for the Aryan or other wandering tribes.

From the west came the Northmen, who settled the country about the Baltic sea and founded Novgorod the Great, the oldest town in Russia, and brought many of the customs and habits of western Europe. In the fifteenth century Novgorod was the largest and most important town in northern Europe and a

member of the Hanseatic league. It lost its independence and was overthrown by Ivan the Terrible in 1570, and Novgorod as an independent State ceased to exist and is now a town of little importance.

In the thirteenth century the Mongol Tartars entered eastern Russia and for over 200 years, from 1238 to 1462, ruled, mingling their blood with the Russians. They in turn were conquered by the Russians and driven from central Russia into the valley of the Volga and the Crimea, where their descendants still live.

In the seventeenth century Poland, then one of the largest countries of Europe, undertook the conquest of Russia, and for some years there was a life-and-death struggle between the two nations. Moscow was captured and the king of Poland reigned there for thirteen years. The people of Nijni Novgorod the Great arose, selling their wives and daughters to buy arms, took Moscow, burning a large part of it, and finally expelled the Poles, but not until they had mingled their blood with the Russian. This was the last invasion of Russia that left its impress on the country.

The Great Russians, the inhabitants of the black zone in northern and central Russia, are the most numerous of the population of Russia. In the northwest they intermarried and mingled with the Finns; in the east with the Mongol Tartars. In southern Russia the inhabitants called Little Russians intermarried with the Cossacks and Crimean Tartars and are next in number to the Great Russians. The Cossacks are Russians who preferred the nomadic to the agricultural life, and therefore wandered into the steppes away from civilization and formed bands of horsemen, called often by the country in which they lived, as the Don Cossacks. They resemble in some respects the cowboys of America. They occupied the Crimea and the country north of the Black sea, with Tartar tribes from Turania, Kalmucks, and Bashkirs.

Besides the races named, there are Turanians, Armenians, Poles, Semites, Georgians, and Turks—in all, thirty different races—with Greek, Catholic, Shumanistic, Buddhist, Jewish, Mohammedans, Dissenters and pagan religions of all kinds. These various races formerly intermarried, but the introduction of the Mohammedan religion among the Tartar tribes has prevented further mingling of these various races and has proved a great obstacle to their elevation and civilization. I was struck

with the variety of races at a dinner in Piatigorsk, a watering place at the foothills of the Caucasus, given by an officer of the Russian army. My host was a German; the other guests, his fellow-officers, were a Pole, a Jew, an Armenian, a Caucasian, a Georgian, a Tartar, a Mongolian, and, finally, a Russian.

In a Tartar and Russian village there is no blending of races. Near one end stands the Mohammedan mosque; at the other the Christian temple. In Finnish villages, on the other hand, intermarriages of the Finns and Russians is causing the blending of the two races.

CHARACTERISTICS OF THE POPULATION.

Russia in Europe, with a population of nearly 100,000,000, is very thinly populated, having only fifteen inhabitants to the square kilometer, while Germany has seventy-eight and England one hundred and fourteen. The population is increasing at a more rapid rate than in either of these countries.

A recent writer says: "The life that men live in the city gives the type and measure of their civilization. The word civilization means the manner of life of the civilized part of the community—that is, of the city men, not of the country men, who are called rustics." The cities of Russia, except St. Petersburg, are small, far apart, and have little connection with each other or influence on the population. The Russian peasant has therefore little knowledge either of city life or of this civilization. He lives far removed from it, and there is little of it in Russia. Only one-third as many in proportion to population live in the cities of Russia as in the cities of the United States.

Two-thirds of the population, including all the Great and Little Russians, live in the black zone, with Moscow as a center. It is estimated that over six-eighths of these are either serfs themselves or are the children of serfs, while 6,000,000 of the remainder are Poles and 2,000,000 Jews.

It is impossible that in one generation such a population of freedmen should have made any considerable advance. Their life and habits are, therefore, mainly such as they were as serfs. It should also be borne in mind that while these are descendants from Aryans, yet this blood has from time to time and in very many generations been mingled with the blood of the Asiatics, and therefore with nations less civilized.

The highly civilized man makes nature subordinate to his

convenience and necessities, but with uncivilized nations nature dominates and man becomes subject to its influence. The character and habits of the Russians are therefore largely fashioned by their environments, which vary little in different localities.

Russia has only two seasons, summer and winter. During the long Arctic winter the people are without occupation, save the tending of flocks morning and night; the days are short and sunless; the nights long; the houses, without ventilation, are hot and close; the air bad. Even in my room, in the largest and best hotel in St. Petersburg, the windows in early November were sealed so tight that a breath of air could not get in. The rooms were heated by steam, which could not be shut off, and the only ventilation was by a small hole in the wall, through which a little fresh air could enter. The peasants wear the same clothes night and day; all sleep together on the large stoves, and are required by their priests to bathe every Saturday evening, using the vapor bath instead of soap. A large room or cave is dug in the earth and heated very hot; here they sit or lie down; fan themselves with a whisk brush; a profuse perspiration opens and cleanses the pores of the skin; they then often plunge into an icy stream or bathe in cold water. They lead idle, listless lives in winter, and when winter ends are little inclined to work. Then follow the long, hot summer days, the heat fully as enervating as the bitter cold. Without mental or bodily activity, they become heavy and lethargic. Their food for generations has been meager, of the poorest kind, almost entirely vegetal, and unsuitable to the climate. Those who survive to mature age have great power of endurance, which often becomes stolid stubbornness or passive courage and resignation. They are gentle-hearted, have little imagination, and therefore no inventive faculty. Every peasant, whether man or woman, wears a sheepskin in winter, bright colors in summer, the garment of nomadic tribes, not worn by any other European race. They have little desire to rule others, or to make the tribes whom they conquer subservient, and are therefore admirably fitted for the work of peaceful agricultural colonization. Wages are very low. The manager of the telegraph service of one section of Russia, with twenty-two offices under him, told us that his salary was 1,100 rubles, or about $550, a year; that the operators were on duty twenty-four hours every other day and received 15 rubles, or $7.50, a month. Wallace tells us that "a family of five, man and

wife, boy, and two daughters, actually lived in the northern part of Russia on sixty-one dollars a year." There are few railroads in Russia, no stage-coaches, few daily and weekly papers, neither magazines nor books, for the peasantry can neither read nor write. They have little more knowledge of the nearest village than we have of the moon.

We can scarcely comprehend such a people or such a life and are not surprised to learn that they resort to cards and drink as the only relief from the dullness of the interminable winter. They never hurry, for time is not money. Among professional men and merchants in St. Petersburg business does not commence until after breakfast, at 11 or 12 o'clock; with dinner at 6 o'clock, little time is left for work, but a long evening for cards.

A typical Russian village consists of two lines of houses, one on either side of the street, each house, built of pine logs, standing alone, from ten to one hundred making a village; each cabin is like its fellow except in size; when you have seen one you have seen all. The floor is of earth; the walls, rough logs, the crevices stuffed with moss, without paint—the type of houses in England in the time of Queen Elizabeth. At one end of the village is the cruciform church, of an oriental aspect, a dome gilded and painted in bright colors, surmounted by a gilt cross. We visited Rostoff, the center of a large commerce with the interior of Russia, a city with a population of 50,000, at the mouth of the Don, inhabited by Russians and Cossacks. It has a large casino, containing a ball-room, gardens, billiard and refreshment rooms, where all grades of society assemble on Sunday to dance and hold parties of pleasure. We spent two hours here and took a drosky drive to the town about a mile distant. It is a long, dirty, straggling, unkempt village, with broad streets, paved in the time of Peter the Great, apparently never repaired since his death; the only difference in the streets is that some are worse than others; a few large stores and a great market place, with bread enough for an army; potatoes, quantities of beautiful-looking tomatoes, egg-plants, grapes, and pears. The place looked as though it had considerable trade, but is devoid of all interest. We saw no new or fine buildings; only old and dilapidated houses.

In Russia there is no middle class and little intercourse between the officials, who are the highest class—the nobles, who are the upper class—and the peasants. They live in a world as distinct as Europe and Asia. The upper class follow the customs

and manners of the west. Formerly they used the German language, then the French, taking from France liberal ideas, but now Russian is the language of the court and has been adopted in polite society. The upper classes are as highly cultivated, as honorable, and as polished as any of the upper classes in Europe.

The peasantry, recently serfs, in their feelings and habits are Asiatics, faithful to ancient manners and customs. They look upon innovation or change with distrust. St. Petersburg is the type of the new ideas, Moscow of the old.

We now turn to northern and Arctic Russia, a country with inhabitants very different from that we have just described. In the west is Finland, formerly subject to Sweden, but annexed to Russia in 1800. The name and origin of the Finns is an ethnological problem. They are supposed to be of the same race as the Hungarian and Bashkirs. In summer the sun's rays are nearly constant, and the growth of vegetation continuous and rapid.

The people are tall, strongly built, and well proportioned, with faces rather square than oval. They are slow, dull, grateful and honest, industrious and energetic. Their peculiar language and literature have attracted much attention, and although writing seems to have been introduced only about three hundred years ago and printing about one hundred years later, yet nearly all can read and write.

In the written language phonetic spelling is employed with almost perfect consistency. One celebrated linguist says, "it is the most harmonious and sonorous of tongues." They are better educated, more highly civilized, and are improving more rapidly than the Russians. Serfdom was never introduced into Finland, and the Finns boast that they have never had a slave nor a noble in all their land. From these causes, while we regard the Russians as Asiatics, we must look upon the Finns as Europeans. Northeast of Finland, on the Arctic circle, and far to the north of it, where the shore-line stretches from Archangel toward the sunrise fifteen hundred miles, bound in ice chains for eight months of the year, where on the cliffs and ledges the snow never melts, a wandering tribe, sometimes called Samoyeds, live in a desert of ice and snow—a land without a road, without a field, without a name. Their dwellings are tents built of poles, open at the top to let out the smoke, and covered

with loose reindeer skins, secured by thongs of seal and walrus hide; within are small compartments, the whole warmed by a fire in the center of the tent and a seal-oil lamp in each compartment. They own herds of reindeer, which alone make the region habitable. In summer they move frequently for food to fresh pastures of green moss, on which the reindeer feed, and on them the wild men of the country live, eating their food without cooking. In the winter they draw near the shore and live on seal and cod. They hunt the squirrel and fox and sell their skins to the Russians, and thus purchase a few of the necessaries of life. Their only arms are the bow and arrow. The Samoyeds are believed by some to be Finns, who, forced far into the Arctic region, have degenerated and lost most of the peculiar habits of the Finns.

South of the agricultural zone we come to a third civilization, to another and different life, in the lands of the southwest and in the saline steppes in the southeast. These were inhabited by Cossacks, Tartars, Bashkirs, Kalmucks, and other nomadic tribes, who wandered over the steppes to find pasture for their cattle.

Among these tribes one hundred years ago Catherine II planted colonies of Germans to cultivate the land, establish settlements, intermingle and intermarry with the people, and introduce agriculture, thrift, and habits of industry. This experiment failed, for the Germans have lived almost entirely among themselves, and, while acquiring many of the bad habits of the people, have done little toward improving them. Since the law compelled the Cossacks and Tartars to live in fixed habitations many have migrated into Turania, Armenia, and Turkey in Asia, while from Armenia and Turkey Armenians, Greeks, Druses, and other Christians have come and built flourishing towns and cities on the Black and Aral seas and river Volga. These new settlers are the most industrious and prosperous of the Russians, and immigration will continue as long as these countries are under Mohammedan rule. Before the emancipation of the serf, in 1861, the patriarchal system prevailed, under which each family was its producer and consumer. Since then manufactures have rapidly increased and have nearly doubled the last twelve years. The mining interest has also increased with like rapidity; the annual production of the mines is $67,000,000.

The mercantile or trading class and the manufacturers, usually

the most important and influential, are in Russia less in proportion than in other civilized countries, and have little influence, either with the peasants, as they represent western ideas, or with the nobles, who look down upon them as traders.

This completes a general enumeration of the inhabitants of Russia. We have described the lives of the hunters and fishermen of the north, of the agricultural laborers of central Russia, of the nomadic population of southern and southeastern Russia, and the mercantile or trading class and the manufacturers, who live around Moscow and Tula.

Under one czar, Vladimir the Holy, the peasants could change their religion; under another, Peter the Great, they could change their dress, but time alone can change the Asiatic to the European.

The black zone of Russia is as rich as the prairies of America; the lands cost no more; yet the inhabitants of Austria and Germany, contiguous to this fertile land, immigrate four thousand miles to the prairies of America rather than cross the boundary line into this rich zone. One reason for their preferring America is that in Russia they will be called upon to serve in the army. While this is undoubtedly one cause for their preference of America, yet, as the Germans and Russians have never mingled when they have been brought into contact, it is probable that the difference in the habits and customs of the two races—the one European, the other Asiatic—has as much, if not more, influence in preventing the Germans from emigrating to Russia.

GOVERNMENT.

The diversity of races and languages was formerly much greater than at present, when each tribe had its own laws, religion and customs, more or less barbarous, but in all the paternal form of government. The head of the family and chief of the tribe had absolute power over the family and tribe; the czar a like absolute power over all the tribes. The czar is the head of the government, and the peasants believe him to be appointed by God to be their father and ruler. A republican form of government once existed in Novgorod the Great, and also at Pskoff, but these republics, after enduring one or two hundred years, were attacked by wandering tribes from the Orient and by armed bands from Germany, Sweden and Poland. For the

purpose of repelling these invasions these cities were forced to unite with various tribes of Russia and form a strong imperial government under a czar.

Peter the Great organized municipal governments for towns and cities after the model of the German free cities, but these institutions having no root in the traditions and habits of the people, it has been impossible to maintain them or to interest the people in them.

For many generations there has been no convocation or assemblage of the people. The entire civilization has been Asiatic, differing greatly from that of the west. There was formerly no attempt either at uniformity in the government of the different provinces and nationalities or of symmetry in the administration. There were not only territorial peculiarities, but different systems in the same territory. Changes in the laws were frequently made, but they were only local.

The idea of an united Russia belongs to Czar Ivan Kalita, who reigned in the middle of the fourteenth century, though Peter the Great was the first to realize the necessity of a uniform and central administration if Russia was to become a great nation. He tried to bring order out of chaos and to introduce western civilization among the barbarous and oriental tribes of Russia, and, as there were no persons qualified for official positions, schools were formed to train men for office. Peter the Great had untiring zeal, perseverance, great ability, and genius. He tried many experiments, but frankly admitted their failure, and died, having overthrown many institutions, but without creating a system. His successors took up the work and carried it forward, each according to his ability, and by slow degrees they have created a centralized government, with a certain uniformity in its administration. There are ranks of nobility, but, unlike those of western Europe, the nobles have no political power or right of primogeniture. All their children are of equal rank, so that nobles are found among the drosky drivers of St. Petersburg; their influence depends solely on wealth and personal character.

A council and ministers or secretaries for the different departments of government have been established, but there is neither uniformity of action between the council and ministers nor between the several members of the council or ministry. For the purpose of obtaining fuller information and from a greater variety of sources, the czar, in important matters, often appoints

committees to examine and report directly to him and advise what action, if any, shall be taken.

There is a code of laws, full of commentaries, with a vast number of orders, decrees, and statutes issued by the czar at different times and under different circumstances; also innumerable circulars, open and secret, general, special, and local, forming a tangled growth, so that it is impossible to decide either what the law is or what are the rights of the individual. It is difficult for the czar or his ministers to know how far an order has been executed, for with a censorship of the press it is impossible for either the people or the ruler to know much of the conduct of affairs.

Russia is divided into eighty-five governments and six territories of different areas and population, over each of which is a governor, responsible to the czar, and a council, with a strong centralized administration. The power of the governor is nearly as absolute and unlimited in his territory as that of the czar over the whole empire. Each government is divided into districts. The governor appoints officials in the various districts, who are responsible to him, and these officials appoint police officers in the several villages, responsible only to them. The salaries of the lower officers are very small, and as they are barely sufficient for their support this has led to more or less corruption, although in Russia, as in other countries, embezzlement has not been confined to any class or rank. This was greatly lessened under the late czar, Alexander III, in the central government and in the great administrations.

THE MIR.

In Great and Little Russia, wherever the Slav inhabits, the village community, called the mir, has been persistent and exists today in a form not widely different from that which prevailed in ancient Arya and all over Europe and Asia. There are 107,493 of these communes in Russia. All the land is held by the mir, owned in common, and is divided into three portions—arable, forest, and pasture. The homes are all in the village. The fields, cut into long, narrow strips, are periodically divided among the families, so that each family shall have strips according to its size and numbers. There is a redistribution every few years. Nearly all the women and the greater part of the men are engaged in the cultivation of the land. All the

affairs and business of the mir are regulated in a council, composed of the adult men and of the adult women when heads of a family. This village assembly has power to try and punish criminals, and can even send them to Siberia. It is the only government of which the vast majority of Russians have any experience or in which they take an interest. The peasant governing the world in which he lives does not concern himself with the unseen and far away.

The mir, with the exception of community of property and judicial authority, is the counterpart of the New England town meeting, the corner-stone of our republican institutions.

The brightest men leave the commune and go to the cities to work as artisans, but they must first obtain permission from the mir, return to it when ordered, and send a part of their earnings to the village treasury or forfeit all their interest in the communal property and all connection with their ancestral home and kindred. The land and property being held in common affords little opportunity for that struggle for wealth and a better and higher life absolutely necessary for progress. It is indeed a communistic, socialistic system, which some, even in our day, propose to engraft upon our life.

Within fifteen or twenty years the power of the mir has been greatly limited by the establishment of the provincial government, with its police officer, the representative of provincial government, the police having much greater power in his village than formerly.

SERFDOM.

Serfdom and slavery, unknown in Russia before the fifteenth century, originated from several peculiar causes. Prior to the conquest of Russia by the Tartars, in the thirteenth century, the condition of the peasants of Russia and western Europe was in many respects very dissimilar. Russia never felt the benefits either of Roman law and civilization or of the Roman Catholic church; neither the influence of large towns with municipal rights and privileges nor of the feudal system. The Teutons had a sturdy independence and asserted their rights, while the most enterprising of the Russians, having a predisposition to a vagrant life, preferred to seek independence by wandering away from their communes, forming Cossack bands. This vagrancy was increased under the Tartar rule, when the present Asiatic dress of sheepskin was adopted and other Asiatic habits acquired.

Another marked difference between eastern and western Europe, which also led to serfdom, arose from the ownership of the land, in western Europe held in comparatively small parcels and divided between the church, the nobles, and the people, while in Russia the Czar, as owner of all the land, gave great tracts to a few families or to religious houses, retaining the remainder; but these gifts were of little value while the peasantry were allowed to roam wherever and whenever they pleased.

Laws were passed to remedy this evil by confining the peasantry to certain parts of the country, and subsequently to the estates where they lived. Conscription of the serfs for the army was then introduced, the proprietor was made responsible for the entry of the conscript into the army, and from that arose the obligation of the serf to the master. As the serf could only be profitably employed on the rich black lands around Moscow and Kief, the number of serfs diminished with the distance from the black zone, while in the extreme north and the steppes of the south it never existed. They either worked three days in the week for their masters, having the rest of the week for themselves, or they gave a corresponding portion of their crops, or else one-half of their wages to their masters. It was by slow degrees, subsequent to 1450, that serfdom was established and the serfs became personal property. With this right of property came control of life and limb, and these successive changes, often regulated by laws passed for the relief of the serf, generally resulted in binding his chains tighter.

The act of emancipation in 1861 liberated 49,486,000 serfs, of whom 23,022,000 belonged to the nobles; 23,138,000 to the state, and 3,326,000 to the departments.

A portion of the land owned by the state and of that owned by the nobles and religious houses was by the act of emancipation given to the serfs. The government paid the nobles and religious houses sums fixed by arbitration for the lands surrendered by them, while the serfs paid the state for the land given to them by annual payments running over fifty years, secured by the land and also by the other property of the serfs. The last of these payments will not be due until the early part of the next century. Even now 40 per cent of the land is owned by the state, 2 per cent by the imperial family, 33 per cent by the peasantry, and 25 per cent by private owners.

EDUCATION.

There has never been any national system of education in Russia. Many noble and wealthy families have English nurses and French or German tutors. The children are taught to speak French, English, and German and formerly were often better educated in those languages than in their native tongue.

There are nine universities in Russia, with between fifteen and eighteen thousand students, who are mostly from poor families and often support themselves by teaching. They strongly desire to reform the government, but are ignorant of any other way of accomplishing their object than by its overthrow. They have therefore become nihilists, hoping to improve the people without realizing how much evil they do. They have converted the universities into hot-beds of nihilism. The government has consequently subjected the students to very strict regulations, not only in their study but in their life outside as well as within the university, the tendency now being to restrict instruction and confine it to specified lines.

In addition to these nine universities, there are medical and professional schools for engineers, electricians, and mechanics, not included in the above enumeration. Each of the eighty-five governments has a grammar or high school, and the pupils on graduating from these schools can enter the higher seminaries.

There are also secondary common schools and gymnasiums, with 2,500,000 scholars, while there are 15,000,000 of school age. Of every ten Russian men, two may be able to read, but of every ten Russian women, hardly one. For the last ten years considerable sums have been appropriated by the government for educational purposes, and in 1893 $31,000,000 by the general and local governments; $175,000,000 a year were expended on the army and $22,000,000 on the navy, while in the United States $156,000,000 are annually expended for education.

Slight as are their educational privileges, and probably because they are so slight, the people have no desire for a better and fuller system. During my stay at Nijni Novgorod I was invited to go over the house of one of the wealthiest men in the place. It was a very magnificent house, with a broad marble stairway leading to the salon, the floor of which was mosaic and the hangings fine tapestry. I visited every room in the house; in only one did I see a book, paper, or writing materials of any kind, and that was the children's school-room. I was informed that

neither the master nor mistress could read or write, but I was, perhaps, misinformed. On leaving I kissed the hand of the lady of the house, and in return she kissed my forehead, the invariable custom in old Russian families in bidding adieu to guests with whom they were pleased. The family, I was informed, lived in two or three small rooms, keeping the others for show and an occasional party.

Within the present century Russia has developed a literature of poetry and prose, history and romance, excelled by no other nation. Few novels are more read today than those of Tourgenieff and Tolstoi and other Russian writers. Most of them recount tales of Russia and Russian life, and have a wide circulation in other countries. The education of these writers and their mental training have been essentially Russian, and their writings, therefore, touch the heart of the Russian people, and this has led a constantly increasing number to learn to read. There is also a large number of folk songs and tales which are widely sung and recited among the peasantry. Science has also made as rapid progress as belles-letters. There are no better geologists and chemists in the world than the Russian, while other scientists are not far behind. In 1892, 9,588 books were produced, with an aggregate of 30,000,000 copies.

THE FAIR AT NIJNI NOVGOROD.

The geographical position of Nijni Novgorod is most favorable as a gathering place for people from all parts of Russia and the Orient. Situated at the junction of the Volga and Oka, it is easily accessible by these rivers and their branches and canal connections to people from all parts of Russia and from some parts of Asia. It is also the nearest large city to the lowest passes for caravans between Russia and China. This position makes Nijni Novgorod the natural place for the great fair of Russia. These fairs were formerly held in all the countries of Europe and were largely attended, but with good roads, steamboats, and railroads the necessity for them has ceased, excepting in Russia and some parts of Asia.

In 1881 I visited the fair at Nijni Novgorod. Held on low, flat ground opposite the city, for more than five hundred years this fair, though not always held at Nijni Novgorod, has been the great mart of exchange for the products of Russia, Siberia, China, Persia, Turania, and the Crimea. The fair is opened in

July and continues through August and September. Some of the articles for sale are brought by rail, but most by barges or steamboat. I counted fifty tugs from one point, while two or three times as many were anchored in other parts of the river.

From Siberia are brought furs and diamonds, precious stones, fine-toned bells, iron and wooden utensils, Siberian shoes, made of felt, impervious to snow or water, heat or cold. From China come caravan tea, worth $2.50 per pound, the finest tea that is drunk, and brick tea, the poorest, worth only 15 cents per pound. From Persia come precious stones, fruits, carpets, and silks; from Circassia, shawls, slippers, and oils; cotton from Khiva and Bokhara; oil and wool from Astrakhan; from western Russia, woolen, linen, and vast quantities of hardware, nails, and steel, while Germany, France, and England sell their goods by sample. There is a palace with salons for great and small balls and dinners. There are streets with buildings and stores of stone, brick, and iron. These were found insufficient, and three thousand bazaars of a temporary nature are often erected. The same merchants come year after year, and often from generation to generation, and occupy the same buildings. Some come on horseback with their stores, others with steam-tugs towing barges filled with merchandise. Near by on the river Oka are sheds, nearly a mile in length, filled with Siberian iron, rolled, bar, and cast iron rods, plate iron, and boiler plates, wire, hollow-ware, stoves, nails, and all descriptions of rough iron-work. Here also are churches for all creeds—Russians, Chinese, Tartars, Buddhists, Catholics, and Lutherans.

After the fair is over, by the middle or last of September, the place is deserted, stores and houses closed, the goods are taken away, and not a soul is seen in the place where only a few days before three or four hundred thousand people were gathered. The bridge of boats which connects the fair-ground with Nijni is taken down and removed for the winter.

TRAVELING.

The different methods of traveling show the habits and civilization of a people. In the far north of Russia the sledge and the reindeer are only used; in Finland, steam or sail boat or sledge. Travel in summer by land is unusual; they wait for sleighing or go by boat. In central Russia they travel by railroad or

tarantass; over the Caucasus and generally through the country by tarantass.

In southeastern Russia the horse and camel are the sole means of locomotion, and travel is generally by caravan. In several of the large cities there are hotels, as in other parts of Europe, but in the country hotels are unknown; only rooms are furnished at khans or caravansaries, as all travelers carry their servants, provisions, bed, and bedding. Everywhere is found the samovar, a large copper vessel, with a long tube or funnel extending to the bottom, kept filled with charcoal, which when lighted smoulders all day long, keeping the water hot day and night, ready for making tea. In the conveyances for travel, in the hotels, and in everything else outside the large cities Asiatic customs prevail. There are regular stations where horses are kept, but they cannot be obtained without a prodovoina—a paper signed by the proper officer—which gives the traveler a right to claim the horses at a price fixed in the paper, which is usually very low.

From Berlin to St. Petersburg and Moscow the sleepers are large, roomy, and clean; the accommodations for sleeping are excellent; the stations and restaurants are well appointed, large, and handsome. After leaving Moscow, the first night we had pillow-cases and mattress in the sleepers, but no sheets; the second night neither pillow-cases nor mattress.

South of Moscow, when I was there the stations were poor, without restaurants, and even without water for washing. We reached Vladikavkaz at night and drove directly to a hotel which we understood was kept by a Frenchman, but he had left, and there was no one in the hotel, or apparently in the village, who could speak either French, German, or English. Fortunately we found a boy from one of the neighboring German settlements who could speak German.

The next morning we started on our trip, through the Dariel pass, across the Caucasus in a tarantass, a boat-shaped, covered carriage without springs or seats, for the roads are so rough that springs would soon break, without opportunity for repairs. We leaned against our trunks in the back of the carriage, filled with straw. We started with four horses abreast, driven with six reins, one to each of the outside horses and the other four to the pole-horses. We drove rapidly, but were often delayed at post-stations waiting for horses. While we were stopping, more than once, an official drove up. Horses were immediately harnessed

and he drove on, although we had been told that there were no horses in the stables. We took a few provisions with us and found something to eat at one or two of the stations. At night there was only one common room, where all lodged and slept on the floors or benches, and as this is also used as a waiting-room for travelers by night while their horses are being changed, there was little opportunity for sleeping. The Russians carry their own beds and provisions, but we were not so fortunate, and so were obliged to lie on the boards, with straw for our beds.

At the end of the second day we were over the mountains and in Asia. We stopped at the post-station. Our provisions were gone, and we could get nothing at the station but a samovar with hot water; so, late at night, we drove on to Tiflis, a city of over one hundred thousand inhabitants.

Through Tiflis the river Kur runs, with beautiful views of mount Kazbek and the snow peaks of the Caucasus to the north. Steep banks on either side divide the city into two parts, the one new, with fine boulevards, European civilization, and handsome houses, occupied solely by Russian officials; the other, the old part, on hilly ground, inhabited by Persians, Armenians, Georgians, and others from the many different tribes of the Caucasus. Here are bazaars like those of Constantinople, Cairo, or Damascus, where goods from all parts of the Orient are sold.

CONCLUSION.

Many causes have been and are still at work that must arouse the Russians. The first great impulse arose in the early part of the present century, during the Napoleonic wars, when the Russian armies gathered from all parts of the kingdom, marched to Berlin and Vienna, and mingled with the armies of Prussia and Austria. Then came the invasion of Russia by Napoleon, the burning of Moscow, followed by the second march of the Russian armies through Europe, and their entry into Paris in 1814, in each case coming home with enlarged vision and new ideas. Second, the introduction of steamboats on the rivers; third, the Crimean war and fall of Sebastopol, which aroused the ruling class to the necessity for railroads and better intercommunication between the different parts of the empire, and led to the construction of three lines of railroad from the north to the south through the length of Russia, and three lines from its western to

its eastern boundary, thus inviting the people to travel from place to place and to see more of the world; fourth, as a second result of the Crimean war was the freedom of the serfs in 1861 from a slavery of one hundred and fifty years; fifth, the construction of the railroad across the Ural mountains to Siberia, and its subsequent extension east, through the southern part of the country, to the Pacific, through the rich agricultural region of Siberia; sixth, the trans-Caspian conquest and the construction of the railroad along the borders of Persia and Afghanistan, across the desert and the river Oxus to Samarcand, opening up several countries and a large population to the manufactures and commerce of Russia; thus a large and profitable commerce has been created or diverted from England to Russia, which must greatly benefit Russia and trans-Caspia; seventh, the export of grain and petroleum from Russia to Europe, which is rapidly increasing, and the money obtained in exchange must greatly benefit the Russian farmer.

The destinies of Asia are in the hands of Russia and England, and are more intimately connected with Russia than with England, for the Russians have greater affinity with the Asiatics than the English, their influence over them is greater, and the Asiatics are more easily reconciled to the government of Russia than to that of the English.

This contact and intercourse tend to develop both Asiatics and Russians. The day of awakening, of progress, of education, of prosperity to the Russian peasant is sure to come; but whether this civilization shall be that of Europe and America or Asia and China is uncertain. Russia, with her empire extending from the Atlantic to the Pacific, will become the leading nation of the Orient.

U. S. REVENUE-MARINE STEAMER "BEAR" MOORED TO A FIELD OF ICE IN BERING SEA.

THE ARCTIC CRUISE OF THE UNITED STATES REVENUE CUTTER "BEAR"

By Dr Sheldon Jackson, *United States General Agent of Education in Alaska*

Expeditions to the Arctic have always had a fascination for mankind. From the early voyages of the Norsemen down through the successive expeditions of Davis, Baffin, and Ross to that of Peary the world has honored the men who have braved the dangers of the Arctic in voyages of discovery lasting from one to three years, but little account has been made of the whalers who have encountered these same dangers for many years in succession, and particularly of the United States revenue cutter service that has annually ventured into these icy regions for sixteen years past. The service began in 1880 with the sending of the little cutter *Corwin* into the Arctic in search of the *Jeannette*, and an Arctic cruise has been made each season since that time. In 1883 the steamer *Bear*, after the rescue of General Greely and party of the Lady Franklin bay expedition, was turned over to the United States Treasury Department and detailed for the Arctic service. She is a barquentine-rigged steamer, 198 feet long, 30 feet wide, and 18.5 feet deep, with a capacity of 714 tons. She was built at Greenock, Scotland, for the Dundee sealing and whaling fleet, and is an excellent sea boat—in fact the best in the Arctic ocean for work in the ice. The commanding officer from 1884 to the present time has been Captain Michael A. Healy, an officer justly rendered famous by his long, successful, and in many ways remarkable service in the dangerous waters of Arctic Alaska.

The annual cruise of the *Bear* to the Arctic ocean is unique in its multifarious duties and its practical usefulness. In addition to the ordinary duties of a revenue cutter in protecting the interests of the customs, more particularly by the prevention of smuggling by the whaling fleet, this steamer has performed the duty of a traveling life-saving station. During these twelve years it has rescued from the bleak and sterile coast of western and Arctic Alaska a thousand shipwrecked whalers and destitute mariners. Not a season passes without one or more whalers

being wrecked and relief being furnished by the *Bear*. In addition to affording relief to the whaling fleet in times of disaster and peril, its record is equally brilliant in the protection of thousands of half-civilized natives from the rapacity of the white man and the demoralization that comes from the white man's rum. Along vast stretches of coast (from 10,000 to 12,000 miles) unknown to civilization, the flag of the revenue steamer is the only evidence of the authority of the Government that is ever seen and the only protection ever afforded. The cruiser *Bear* also furnishes the only medical attendance which the natives living along thousands of miles of coast ever receive. In 1890 the importance of its annual cruise was still further increased by its affording transportation to the United States general agent of education in Alaska in his establishment and supervision of Government schools in western and Arctic Alaska, and in 1891 still another addition was made to its usefulness by its being employed in the transportation of domestic reindeer from Siberia to Alaska. Its visits to the native villages upon the American coast and the search for reindeer along the coast of Siberia bring it into many bays and regions little known to the geographic world. During the establishment of schools and the introduction of domestic reindeer into Alaska the writer was enabled, by the permission of the Secretary of the Treasury and the courtesy of Captain Healy, to make five consecutive annual cruises along the Arctic coasts of Siberia and Alaska. The work being now well under way, his place was this season taken by the assistant agent, Mr William Hamilton. The cruise of the *Bear* in 1895 was over much the same course as in previous years.

After patrolling the North Pacific during May and June the *Bear* left the wharf at Dutch harbor, Unalaska, on June 24 for her Arctic trip. The next day she sighted through the fog first St. George island and then St. Paul. The sea being too rough to land, the ship pushed on to the northwest, passing St. Matthew island on June 26, and reaching anchorage at St. Lawrence island on June 28. Very soon the natives swarmed on board, bringing tidings that Mr and Mrs Gamble, in charge of the Government school on the island, were in excellent health and had had a very successful year. A sewing machine and a cabinet organ for Mrs Gamble, with supplies for the family and a twelve months' mail, were landed safely through the surf. Hoisting anchor on June 30 the *Bear* crossed over to Indian

HERD OF REINDEER LYING DOWN.

Photographed by A. L. Broadbent, U. S. R. M.

point, Siberia, about 40 miles distant. There two Cossack officers of the Russian army were found taking a census of the village. This was the first visit of Russian officials to that section of the Siberian coast in many years, and the natives brought the Russian coins they had received from them over to the ship to sell as curios. Here, as elsewhere on the trip, the ship's surgeon went ashore to treat the sick and ailing. The principal native of the village is Koharri, who is a noted trader all along the coast. He has a little frame whale-house filled from floor to ceiling with tobacco, flour, and looking-glasses, which he has obtained from the whalers and from which he supplies the country for hundreds of miles around. This man has been known to have as much as $75,000 worth of whalebone in his storehouse at one time. He does a business of probably $100,000 a year, and yet not a single coin of gold or silver nor a single bank note or bank check is used, nor are any books kept. All transactions are by barter, furs and whalebones being exchanged for tobacco, flour, and whisky. This wholesale merchant of the North Siberian coast can neither read nor write, nor can any one associated with him. Although so wealthy, he lives in an ordinary tent and sleeps on the ground, on a pile of reindeer skins.

On several occasions the *Bear*, in search of reindeer, has turned southward from Indian point and sailed up Holy Cross sound, at the head of Anadir gulf, some 300 miles into Siberia. In 1893, while in search of reindeer, we discovered a large river emptying into Holy Cross sound. After visiting a herd of reindeer, an officer and crew entered the mouth of this stream, the *Bear* being the first ocean steamer that had ever plowed those waters. This season the *Bear*, turning northward, anchored, on July 1, off South head, St. Lawrence bay. Peter and Kaimok, the leading men of that section, came on board and sold 40 head of reindeer. The herd, however, was on the opposite side of the bay and could not be reached until the ice should go out, a month later. Being unwilling to wait, the captain set sail for King island, which was reached the next morning. At this point during two previous seasons the *Bear* was caught and imprisoned in large ice floes.

Leaving the island at 8 a. m., the *Bear* soon encountered large cakes of ice at the entrance to Port Clarence. Forcing her way through the ice, she found seven whalers at anchor inside, and news was received of the successful winter of the reindeer herds.

The 4th of July was spent with the whaling fleet, at anchor. A baseball game on shore and a salute of twenty-one guns at noon, with a dinner on the *Bear* to the whaling captains, comprised the public celebration of the day. On July 5 the *Bear* left for St. Michael, where she arrived the following day. On July 8 anchor was hoisted and a trip was made to the native village on Sledge island. On July 9 the steamer made Bering straits, calling at East cape, where four or five influential natives were taken on board to aid in procuring reindeer. Learning that there was a large herd about 50 miles to the northward, the vessel entered the Arctic ocean. Early in the morning of July 11 the *Bear*, picking and pushing her way through the ice, reached Utan At this place 16 deer were purchased and brought on board. Continuing the trip up the coast, the *Bear* tied up to a huge ice floe near cape Serdze, Siberia. While there target practice was had at distant pieces of ice. On the 14th, learning that there were some deer at Chacoran, the vessel steamed over to that village, where 22 deer were secured. The ice closing in, the cutter was compelled to move a few miles farther south. At this point 73 head of deer were purchased, and at midnight the *Bear* got under way for the reindeer station at Port Clarence, passing through a gale on the 16th and reaching point Spencer on the 17th, where she anchored. About noon on the 20th, the gale having subsided, the *Bear* steamed over to the station and landed the deer. The brig *W. H. Meyer*, with the annual supplies for the several stations and schools, was found wrecked on the beach in front of the station, having gone ashore during the gale on the night of the 17th. The supplies for the reindeer station had fortunately all been landed, but those for the schools at cape Prince of Wales and point Barrow were lost.

On July 22 the *Bear* weighed anchor and headed for Siberia for another load of reindeer, and on July 23 she reached St. Lawrence bay. On the 24th she steamed to the head of the bay, where 43 head were secured. The next day she returned to the reindeer station, where the deer were landed on the 26th. On the 28th, the *Bear* having taken on board Mr and Mrs Hanna, who had been wrecked on the *W. H. Meyer*, with their supplies received from reindeer station, sailed for cape Prince of Wales, where they were landed that afternoon. Again hoisting anchor the steamer left for Kotzebue sound. On the way the schooner *Jessie* was boarded and examined. On July 30 the *Bear* anchored

SCENE AT POINT BARROW IN APRIL.

SCENE AT POINT BARROW IN APRIL.

in the lee of Chamisso island. On the 31st, while the vessel was lying windbound, Dr Sharp and Mr Justice, of the Philadelphia Academy of Sciences, and Mr William Hamilton, of the Bureau of Education, together with a party of officers, made an excursion to Choris peninsula. On August 5 the steamer left for point Hope, where it arrived next day. Here the school and whaling stations were visited, and Dr Driggs, one of the teachers, who had been in that country for five years, was taken on board to return to the states for a vacation.

On August 7 the *Bear* started up the coast for point Barrow, wending its way through large packs of floating ice, and on the following day caught up with the whaling fleet at anchor near Icy cape, at the southern edge of the great Arctic ice pack. The whaling fleet had been at anchor for 19 days, waiting for the ice to open. The *Bear* lay there for 14 days longer, waiting for an opportunity to get farther north. Parties from point Barrow, who came down the coast for their mail, reported that the past winter had not been very cold, the lowest temperature being 30° below zero. Giving up all expectation of getting farther north, young ice forming on the sea and on the rigging of the vessel, the captain concluded to turn southward, which he did on August 22. The following day a shoal of walrus was sighted several miles away, and hunting parties were sent out and secured 10 of them. Picking up the walrus, the vessel continued southward, calling at point Hope the next day and reaching the reindeer station August 27. Two days were spent in securing requisitions and finishing up the business of the year. On September 1 the steamer, while near St. Michael, took on board 16 destitute miners from the Yukon region. On the evening of September 4 the vessel anchored off the St. Lawrence island village. The evening was spent in closing up the season's business at the station. Requisitions were made out for another year's supplies, last letters were received, farewells were spoken, and Mr and Mrs Gamble were again cut off from all communication with the outside world for another year. At 4 a. m. on September 5 the *Bear* was again under way. September 6 St. Matthew and Hall islands were passed, and on the 7th anchor was dropped at St. Paul island, where on the 8th a landing was made for a few hours. On September 9 a similar landing was made at St. George island, and at noon on September 11 anchor was dropped in Dutch harbor, Unalaska, closing the Arctic cruise of 1895.

THE SCOPE AND VALUE OF ARCTIC EXPLORATIONS*

By General A. W. Greely

In a brief twenty minutes one can touch only in a desultory way on this great topic that engages the thought and attention of so many famous members of the Geographical Congress, yet a somewhat general outline of the scope and value of Arctic exploration may not be amiss.

This, however, is neither time nor place to present in detail those phases of Arctic exploration that appeal so strongly to the popular fancy. If one would gain an adequate idea of the true aspects of such voyaging, he must turn to the original journals, penned in the great White North by brave men whose "purpose held to sail beyond the sunset."

In these volumes will be found tales of ships beset not only months, but years; of ice packs and ice fields of extent, thickness, and mass so enormous that description conveys no just idea; of boat journeys where constant watchfulness alone prevented instant death by drifting bergs or commingling ice floes; of land marches when exhausted humanity staggered along, leaving traces of blood on snow or rock; of sledge journeys over chaotic masses of ice, when humble heroes, straining at the drag-ropes, struggled on because the failure of one compromised the safety of all; of solitude and monotony, terrible in the weeks of constant polar sunlight, but almost unsettling the reason in the months of continuous Arctic darkness; of silence awful at all times, but made yet more startling by astounding phenomena that appeal noiselessly to the eye; of darkness so continuous and intense that the unsettled mind is driven to wonder whether the ordinary course of nature will bring back the sun, or whether the world has been cast out of its orbit in the planetary universe into new conditions; of cold so intense that any exposure is followed by instant freezing; of monotonous surroundings that threaten with time to unsettle the reason; of deprivations wast-

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ing the body, and so impairing the mind; of failure in all things, not only of food, fuel, clothing, and shelter, for Arctic service foreshadows such contingencies, but the bitter failure of plans and aspirations, which brings almost inevitable despair in its train.

Failure of all things, did I say? Nay; failure, be it admitted, of all the physical accessories of conceived and accomplished action, but not failure in the higher and more essential attributes—not of the mental and moral qualities that are the foundation of fortitude, fidelity, and honor. Failure in this latter respect has been so rare in Arctic service as to justly make such offender a byword and scorn to his fellow-laborers and successors.

Patience, courage, fortitude, foresight, self-reliance, helpfulness—these grand characteristics of developed humanity everywhere, but which we are inclined to claim as special endowments of the Caucasian race—find ample expression in the detailed history of Arctic exploration. If one seeks to learn to what extent man's determination and effort dominate even the most adverse environment, the simple narratives of Arctic exploration will not fail to furnish striking examples.

There is a widespread impression that all Arctic voyages have been made for practically the same general purpose, whereas polar research has passed through three distinctive phases: First, for strictly commercial purposes in connection with trade to the Indies; second, for advancement of geographical knowledge, and, third, for scientific investigations connected with physical sciences.

Commercial interests dictated the grand series of voyages wherein England, competing with Spain from the period of the ventures of the Cabots to the discoveries of Baffin, sought for a short route to the Indies across the pole or by a northwest passage. As the futility of efforts by these routes became more or less apparent, and as the naval strength of Spain and Portugal ensured their continued monopoly of the growing and valuable trade of the Orient, the attention of England was turned in sheer desperation to the northeast passage as possibly offering a competing route. While this quest proved impracticable for the sailing ships of the sixteenth century, yet its prosecution inured to the great financial advantage of England through the estab-

lishment thereby of intimate and exclusive commercial relations with the growing and hitherto inaccessible empire of Russia.

The renewal of the true spirit of geographical exploration in the early part of the present century gave rise to a series of unparalleled voyages in search of the northwest passage, which resulted in the most splended geographical achievements of the century. These voyages were not splended alone from the definite results attained, nor from the almost superhuman efforts that ensured success, but also from the lofty spirit of endeavor and adventure that inspired the actors. The men who strove therein were lured by no hope of gain, influenced by no spirit of conquest, but were moved solely by the belief that man should know even the most desolate regions of his abiding place, the earth, and the determination that the Anglo-Saxon should do his part.

Franklin said: "Arctic discovery has been fostered from motives as disinterested as they are enlightened; not from any prospect of immediate benefit, but from a steady view to the acquirement of useful knowledge and the extension of the bounds of science, and its contributions to natural history and science have excited a general interest. The loss of life in the prosecution of these discoveries does not exceed the average deaths in the same population at home." Parry adds: "Such enterprises, so disinterested as well as useful in their object, do honor even when they fail. They cannot but excite the admiration of every liberal mind."

Of Chancellor's voyage to the northeast Milton said: "The discovery of Russia by the northern ocean . . . might have seemed an enterprise almost heroic if any higher end than excessive love of gain and traffic had animated the design." Modern critics except from dispraise the gallant men who in this century have given their lives from no sordid motive, and so merit Milton's full praise.

If not all, certainly some of these arctics have been animated with the noble thought of the poet:

> And this gray spirit yearning in desire
> To follow knowledge like a shining star
> Beyond the utmost bound of human thought.

Suffice it is to say, for geographic research, that it has remained for the nineteenth century, with its wealth of industrial inven-

tions and store of indomitable energy, to make the northwest and northeast passages, to outline the northern coast of America, and to discover the archipelagoes and islands situated poleward from the three continents of the northern hemisphere.

Hudson's voyage to the Greenland sea, in 1607, was of vast industrial and commercial importance, for his discovery and reports of the incredible number of walruses and whales that frequented these seas gave rise to the Spitzbergen whale fishery.

The voyage of Poole for walruses and exploration, in 1610, was followed by the establishment of the whale fishery by Edge in the following year. Enterprising Holland sent its ships in 1613, later bringing in its train whalers from Bremen, France, and other maritime centers. The whale fishery, as the most important of Arctic industries, from which Holland alone drew from the Spitzbergen seas in one hundred and ten years, 1679–1778, products valued at about $90,000,000, merits at least our brief attention.

Grad writes: "The Dutch sailors saw in Spitzbergen waters great whales in immense numbers, whose catch would be a source of apparently inexhaustible riches. For two centuries fleets of whalers frequented its seas. The rush to the gold-bearing placers of California and the mines of Australia afforded in our day the only examples at all comparable to the host of men attracted by the northern fishery."

Scoresby says: "In a short time (whaling) proved the most lucrative and the most important branch of national commerce which had ever been offered to man." This emphatic statement is devoid of exaggeration in the slightest degree. Scoresby gives, year by year, the products of the Dutch whale fishery in the Arctic seas from 1668 to 1778, which aggregate in value over $100,000,000. When it is known that Scoresby himself caught in thirty voyages fish to the value of $1,000,000, it will not be considered extravagant to place the products of the British whale fishery at $250,000,000. Starbuck gives the product of the American whale fishery from 1804 to 1877 as $332,000,000, making the aggregate of three nations, America, England, and Holland, more than $680,000,000. How far this amount should be increased on account of seal, walrus, and other strictly Arctic sea game need not be considered, but Norwegian and Russian fishers have successfully exploited these sources for the past century.

The visit of Laikoff to the New Siberian islands added eventually a wealth of fossil ivory to Siberian trade that was only second in value to the extraordinary stock of furs that grew out of the explorations of the Arctic valley of the Kolima by Russian hunters. From Hudson's voyage to the bay of his name are attributable the initiation and development of the extremely valuable fur trade of the Hudson Bay Company. Bering failed to outline the definite geographic relations of the contiguous shores of Asia and America, but his voyages directly resulted in the very extensive sea and land fur trade which has proved so profitable through a century and a half.

Altogether, it may be assumed that in a little over two centuries the Arctic regions have furnished to the civilized world products aggregating twelve hundred millions of dollars in value.

Nor should it be inferred that commercial ends, scientific knowledge, or the glory of effort crystallized in accomplishment have alone turned man to the polar regions. The altruistic spirit of Egede lavished its wealth of effort in the turning of the Greenland Eskimo to Christianity and civilization, and it enkindled the flame of Christian endeavor that Crantz and the Moravian brethren kept alive during the critical phases of Greenland's history. As Cowper says:

> See Germany send forth
> Her sons to pour it on the farthest north.
> Fired with a zeal peculiar, they defy
> The rage and rigor of a polar sky
> And plant successfully sweet Sharon's rose
> On icy plains and in eternal snows.

In recent days Great Britain has had its Duncan, France its Petitot, and the United States its Jackson, whose evangelizing labors, acting through the more successful method—that of inculcating civilization and helpfulness—are a part of the glory of this time. The residence of Holm among the east Greenland natives and of Peary with the Etah Eskimo have, it is to be hoped, not been fruitless along these lines and should stimulate human sympathy for these dwellers on the northern edge of the world. Every lover of mankind will rejoice that Denmark, with the Christian solicitude that has always marked its policy towards the Greenlanders, has extended its unprofitable trade relations to east Greenland and established a missionary station at Angmagsalik for the benefit of the natives. May we not hope that

some religious association may likewise plant the seeds of civilization and Christianity among the Cape York Eskimo?

There is neither intent nor time to worthily eulogize the deeds of living Arctic men, nor even to stimulate the eager rising youth who shall outdo all that has gone before; rather would this brief word add a leaf of laurel to the crowned dead whose Arctic fame forms part of each nation's historic heritage—hallowed for the past, priceless for the present, indispensable for successful futurity.

Shall I name the soldiers or sailors, the explorers or scientists, the trader or the whaler? Rather all, since science knows neither station nor profession, neither dialect nor nationality.

In the roll-call of the dead Austria-Hungary answers with Weyprecht, whose greatest fame will ever be associated with the establishment of the international polar stations.

Denmark follows, equally at home in American, Asiatic, or European waters, through Munk and Hamke, Jan Mayen and Vitus Bering.

Then France with De la Croyère, Pages, Blosseville, Fabre, Gaimard, Marmier, Martins, and Bellot, the last a name ever grateful to English ears.

Germany has generously loaned her talent to insure success wherever sound and important scientific work is to be done. Baer, Bessell, Petermann, and Steller are worthy successors to Frederick Martens, of the seventeenth century—men and work of which any nation may be proud.

Holland, in Barents, Nay, Tetgales, Rip, and Heemskerck, presents a roll of honor well in keeping with the notable work of the thousands of Dutch whalers that exploited the Spitzbergen seas.

The Italian contingent, from the Zeni of the fourteenth century through the Cabots to Bove of our own day, maintain here, as elsewhere, their geographic standing.

Norwegian Othere set in the ninth century the pioneer standard of Arctic exploration, which later, combined with the labor of exploiting the northern seas, has Mattilas, Carlsen, Tobiesen, and a score of others as worthy successors.

Russia finds the Arctic problem a domestic question, and from the time of Peter the Great to today has done an amount of work not generally appreciated or known. The Laptieffs and Deshneff, Tchirikof, and Liakoff, Anjou and Wrangell, Kotzebue and

Lütke, Pachtussof, Krusenstern and Zivolka, stand forth in the annals of the world.

In Hedenström and Torrell Sweden finds examples that have borne such abundant fruit in the late active labors of her enthusiastic sons.

Once it was said that the almighty dollar was the object and end of American endeavor, but when American treasure—not by the millions but by the billions—was poured out and lives by the hundreds of thousands were joyfully given for an idea the men of the new world rose to a higher place in European estimation.

A fellow-townsman of mine was a petty officer under Sir John Franklin, and among the hundreds engaged in the Franklin search none had a more altruistic and generous spirit than the American Elisha Kent Kane. Hayes left no danger undared to reach his "Open Polar Sea." Rodgers dared all, in Arctic ice as in the War for the Union. De Long and Ambler knew how to die, but not how to desert a helpless comrade. Hall followed the Arctic sledge to his very death. Lockwood, whose personal toil and suffering accomplished the farthest north and set the goal beyond which some more fortunate rival will soon pass, met with fortitude and sweetness the harsh fate which debarred the world from placing its laurel wreath save on his grave.

I can scarcely say aught of British effort in a field that has been peculiarly England's for the past three centuries. And how, among her innumerable Arctic dead, shall I single out representatives, worthy examplers of British courage and effort? Like Macbeth's kings, the line stretches out to crack of doom.

Great were the daring navigators of the sixteenth and seventeenth centuries—Chancellor and Davis and Frobisher, Hudson and Waymouth, Bylot and Baffin; but were they greater than in their way were Cook, Hearne, and Mackenzie in the eighteenth?

And when we come to their worthy compeers of this century, there is barely room for the names of these daring spirits. Here is Britain's unequaled roll:

Austin, Back, Beechey, Buchan, Clavering, Collinson, Crozier, Forsyth, Goodsir, Inglefield, Kellett, Kennedy, Lefroy, Lyon, McClure, Maguire, Mecham, Moore, the immortal Nelson, Osborn, Penny, Pim, Rae, Richardson, James C. Ross, John Ross, Sabine, Saunders, Scoresby, father and son; Simpson, and Stewart.

Close communion in spirit and thought with their recorded labors for many years has made for me many friends among the great Arctic dead, and so particularly segregates in my mind, from this alphabetical list, the twin Arctic compeers, Franklin and Parry, as *facile princeps* in this great company.

But the history of these men is inextricably interwoven with the wonderful development of the British Empire, and their deeds forever abide to the glory of the English-speaking race.

And of the Arctic dead of Europe, Asia, and America, from the earliest Othere of Norway and the Zeni of Italy to the latest fallen in Sweden, Nordenskiold the younger, promising son of his distinguished father, there may well be quoted the words of an American soldier:

> On Fame's eternal camping ground
> Their silent tents are spread,
> And Glory guards with solemn round
> The bivouac of the dead.

Storm-stayed and ice-beset no longer, their dust awaits the change and fate ordained by God's eternal laws.

The end they sought, the work they wrought, the courage and devotion they showed should stand as ideals and patterns for the men of the future in the accomplishment of the great Arctic work which it shall be their good fortune to undertake.

But now we look again to England to retake its former place in Arctic research. Shall we look in vain? I believe not.

Let her remember that the beginning of the end will have come for the ever extending and ever developing British power when this insular people would ever consent, for any sum in pounds and pence, that the Arctic relics of Greenwich should be scattered, or that there should ever be removed from Westminster Abbey, rich with its clustering memories and gathered treasures of a thousand years, the tribute of genius to heroism, of England's poet laureate to its Arctic dead.

Well has it been for Britain that hundreds of its youth have imbibed together learning and patriotism, love of the beautiful and admiration for glory, while translating into classic verse these immortal words:

> Not here. The white north has thy bones, and thou,
> Heroic sailor soul,
> Art passing on thine happier voyage now
> Towards no earthly pole.

OBITUARY

Dr Robert Brown, the distinguished botanical geographer, died October 26. He was in command of the Vancouver island exploration of 1864 and was in the Whymper West Greenland expedition of 1867, his glacial and natural history work attracting much attention. His "Manual of Botany" is his best work, although it is less widely known than are his "Peoples of the World," "Countries of the World," "Our Earth and its Story," "Africa," and "Science for All," which aggregate 24 volumes.

Admiral R. B. Pearse, R. N., died in November. He served as mate in H. M. S. *Resolute*, 1850–'51, and made a sledge journey of 208 miles, from Griffith to Bathurst island, during which he and one of his men were badly frozen. He rendered distinguished service to his country during the Chinese war of 1858–'60.

Henry Seebohm, the eminent ornithologist, died November 26. His investigations carried him over the greater part of the world. Two of his most interesting works, "Siberia in Europe" and "Siberia in Asia," were the outcome of his bird trips to the Lower Petchora in 1875 and the Yenisei in 1877, his ship being wrecked on the latter occasion. Seebohm's great works are the "History of British Birds," "Geographical Distribution of Plovers," and "Birds of Japan."

Rear Admiral Shufeldt, U. S. N., who died November 7, has left a record of unusual brilliancy. His most important geographical work was done while he was in command of the Tehuantepec and Nicaragua surveying expeditions. His reports, valuable documents illustrated by plates and maps, were printed by the Government in 1872 and 1874. The greatest service that Shufeldt rendered to America, and, it may be added, to the world in general, was the negotiation, in 1882, of the treaty by which Korea was thrown open to the commerce of the United States, first of all nations.

GEOGRAPHIC LITERATURE

Elementary Physical Geography. By Ralph S. Tarr, Assistant Professor of Dynamic Geology and Physical Geography at Cornell University. Pp. 488, with maps and 267 illustrations. New York: Macmillan & Co. 1895. $1.40.

This book appears well adapted to serve as a text-book of physical geography. It will commend itself by its perspicuous style to the favorable attention of those who may desire information concerning the most recent developments in this important field, without the labor of examining purely professional papers, and who do not care to depend on irresponsible newspaper reports. The chapters devoted to geology are, as might be expected, unexceptionable. In its treatment of ocean currents,

however, the work is open to criticism. With regard to the temperature and wind theories the author fails to make himself clear. He also omits any explanation of the important part the salts play in the matter of ocean currents, and he entirely ignores the Yucatan channel current, the strongest one in existence. The general appearance of the book is excellent. The illustrations, with but few exceptions (as, for example, that of mount Vesuvius, on page 376), are very good and the price is exceedingly reasonable.

The Gold Diggings of Cape Horn: A Study of Life in Tierra del Fuego and Patagonia. By John R. Spears. Pp. 319, with illustrations. New York: G. P. Putnam's Sons. 1895.

So few books have been written about the *terra incognita* between cape Horn and the straits of Magellan that a new one by so well known an author as Mr John R. Spears will be heartily welcomed. It is written in the author's usual quaint style, with a vein of humor running all the way through; and while it does not claim to be a record of personal exploration like Beerbohm's or Lady Brassey's, but merely a collection of newspaper sketches written up at home from data gleaned during a cruise around the edges, it is full of valuable information. While the author's ideas of the gold diggings are a trifle too sanguine, his account of the Ona, Yahgan, Tehuelche, Alaculoof, and other Indians, as well as of the missionaries who are trying in vain to tame them, of the famous Welsh colony on Chubut river, of the general resources, and also of the birds, beasts, and reptiles, of lands at the tip end of the hemisphere is extremely interesting.

Stanford's Compendium of Geography and Travel (new series). Africa. Volume II, South Africa. By A. H. Keane, F. R. G. S., etc. Pp. 671, with 11 maps and 92 illustrations. London: Edward Stanford. 1895. American agents, J. B. Lippincott Co., Philadelphia. $4.50.

This admirable volume, fresh from the press, gives an authentic, "up to date" account of the geography, history, and political complexion of South Africa. It is illustrated by nearly 100 admirably chosen plates and text figures and a dozen excellent colored maps. Perhaps no part of the world has ever undergone so rapid and fundamental a metamorphosis as has South Africa "since the leading powers resolved, a few years ago, to transform this continent to a political dependency of Europe." "Occurrences of far-reaching consequence," says the author, "have followed in such swift succession that in the preparation of this work the chief difficulty has been to keep pace with the shifting scenes. In some instances many carefully prepared pages have had to be greatly modified, and even rewritten, owing to the unexpected turn taken by events in various parts of the continent." Madagascar, Mauritius, and other islands of the Indian ocean are included in the book, and the author adopts the very modern view of an "Indo-African continent" connecting South Africa through Madagascar with the Indian peninsula. While the work deals mainly, as would be expected, with the more purely geographic and

political questions, it still bestows some attention on the fauna and flora, and it would have been well if these subjects had been referred to some of the eminent British naturalists who are so well qualified to speak on these topics.

National Geographic Monographs, published under the auspices of the NATIONAL GEOGRAPHIC SOCIETY. Pp. 336, illustrated. New York: American Book Co. 1895. $1.40.

The first series, comprising Nos. 1–10, ends with December. It consists of memoirs by Powell, Shaler, Russell, Willis, Diller, Davis, Gilbert, and Hayes on geographic topics of primary importance. All geographers will find much that is interesting and instructive in these memoirs, but to American teachers and students they will be especially valuable. They have been published by the American Book Company in the hope that memoirs by authors ranking among the most eminent of American scientists would by their intrinsic worth and scientific interest advance the cause of higher education in the United States.

Tibet. Notes on the Ethnology of Tibet. Based on Collections in the United States National Museum. By W. W. Rockhill. Report of United States National Museum for 1893. Pp. 665–747, pls. 1–52. Washington, 1895.

Readers of these interesting pages will be gratified that so extensive a collection from this comparatively unknown country has been made by the National Museum. It is fortunate that the description of the different objects has fallen into the hands of one so competent by acquirements and experience as Mr Rockhill.

Chili. Republique de Chili. Cartes commerciales, physiques, etc. Par F. Bianconi. Librairie Chaix. Paris, 1895.

A valuable addition to the Chaix series, giving the latest information regarding the agricultural and mineral resources, commerce, railways, etc., of Chili, with a map, 1:2,500,000, embodying the latest surveys.

Special Consular Reports, Vol. 12—Highways of Commerce. The ocean lines, railways, canals, and other trade routes of foreign countries. Washington, 1895. Pp. 763, with 9 maps.

A timely publication, whose value is materially increased by a number of maps, of which the most important show the railways of Mexico, Siberia, Natal, and India. Some of the data, as seems unavoidable in Government publications, are nearly two years old. The railway mileage of the world on December 31, 1894, was 423,923, of which 189,576 were in the United States. At the end of 1892 the mileage of the principal countries and the average cost per mile as given by the German Minister of Public Works were as follows: United States, 174,747 miles, $59,300; Germany, 27,451 miles, $95,200; France, 24,014 miles, $131,900; Great Britain and Ireland, 20,321 miles, $131,000; Russia, 19,622 miles, $90,400; Austria-Hungary, 17,621 miles, $95,400; Canada and other British American prov-

inces, 14,866 miles, $57,600; Italy, 8,496 miles, $114,600; Argentine Republic, 8,161 miles; Mexico, 6,624 miles; Brazil, 6,388 miles; Spain, 6,169 miles; Belgium, 3,379 miles, $131,000.

The information concerning the railways of South and Central Africa is of especial interest, although great progress has been made in the extension of transportation lines during the past year. The value of the report is enhanced by the insertion of the well known map of the world issued by the Hydrographic Office of the United States Navy Department in June, 1891, which shows tracks of full-powered steam vessels, with distances, and probably contains a larger amount of information on this subject than can be found elsewhere within an equally limited space. Its presentation on the map in both graphic and tabular form increases its usefulness. The distances between different ports on the east and west coasts of North and South America and the shores of the gulf of Mexico and Caribbean sea are also shown. The volume contains a full topical index.

EXECUTIVE REPORTS

The annual reports of the cabinet officers, recently transmitted by the President to Congress, contain some items of geographic interest.

WAR DEPARTMENT.—The Secretary of War states that since 1879 $29,500,000 has been appropriated for the improvement of the Mississippi river, of which $8,400,000 has been directly applied to general improvements to aid navigation. The greater part of this amount has been spent on two reaches of the river, each 20 miles long, one situated 80 miles above Memphis and the other 80 miles above Vicksburg. The result has only been to increase the depth of the river at low water by 18 inches. For the improvement of the Missouri river, which for years has had practically no navigation, $8,900,000 has been appropriated. The Secretary questions the propriety of further appropriations for this river.

With regard to the proposed Chicago drainage canal, a board of engineer officers state that the abstraction of 10,000 cubic feet of water per second from lake Michigan will lower the level of all the great lakes except Superior, and reduce the navigable capacity of all harbors and shallows, but to what extent cannot be foretold at this time.

The Yellowstone National Park has now 170 miles of good highways, permitting easy access from the railways to the principal points of interest. It is proposed that 25 miles of additional roads, now impassable for vehicles, be opened, which will complete the general scheme of highways.

The Apache Indian prisoners, comprising about 70 families, have been removed to the Fort Sill reservation, which is being gradually brought to a self-sustaining basis.

The defenseless condition of the principal harbors is dwelt upon and the necessity of liberal appropriations strongly presented.

NAVY DEPARTMENT—*Surgeon General.*—Among valuable special reports are those of Surg. Gen. Tryon, on "The Relation of Naval Architecture to proper Sanitation; Dr H. G. Beyer, on "Normal Growth under the Influence of Exercise," and Dr E. R. Stitt, on "The Medical Aspect of the Nicaraguan Canal." Dr Stitt believes that while the construction of the canal would temporarily increase the prevailing malarial diseases, it would ultimately remove the most potent pestilential forces through changes in swamps and in the level of lake Nicaragua.

POST OFFICE DEPARTMENT.—The Postmaster General states that the revenue of his department for the year 1894–'95 was in round numbers $77,000,000, and that the expenditures amounted to $87,000,000. Mail service has been established on electric and cable lines in Boston, Brooklyn, Chicago, New York, Philadelphia, and St. Louis. The net increase in the number of post-offices is 429, principally in Oklahoma, Indian Territory, and Virginia. Cape Colony has joined the postal union, leaving Korea, China, and the Orange Free State the only civilized nations not embraced therein.

DEPARTMENT OF THE INTERIOR.—The Secretary of the Interior covers in his report the operations of many bureaus, of which the more important are treated under the following heads:

Patent Office.—There were 36,972 applications for patents, 20,465 patents were granted, 12,906 expired, and 3,208 were forfeited for nonpayment of fees.

Indian Bureau.—There are 161 Indian reservations, on which the problem of making the aborigines self-supporting is progressing with more or less rapidity. For schools alone $2,060,695 was appropriated, and nearly $7,000,000 for payment for lands and other treaty obligations. The school pupils have increased by 1,417 during the year. The total enrollment was 23,036, of whom 4,673 are in industrial training schools. Lands have been patented to 6,851 Indians during the year.

General Land Office.—Of public lands there have been disposed of to Indians 42,000 acres; by sale, 417,000; miscellaneous entries, 7,947,000. There remain undisposed of 599,000,000 acres, exclusive of Alaska. The vacant public lands are largely in the arid regions, and from 8 to 25 per cent, according to various estimates, may ultimately be cultivated by irrigation. The Land Commissioner recommends the establishment of forest reservations, and that legislation be enacted relative to public timber, to the surveying of public lands through the Geological Survey, and to the establishment of a district land office in Alaska.

Bureau of Education.—The number of pupils enrolled in schools in 1894 was 15,530,000, or 22.9 per cent of the entire population.

National Parks and Forest Reservations.—There are sixteen reservations, with a total area of 16,325,000 acres, embracing parts of Arizona, California, Colorado, New Mexico, Oregon, and Washington. The more important Yellowstone, Yosemite, and Sequoia parks are protected by military guards.

Geological Survey.—The operations of this important bureau are left for review until the publication of the full report of the Director of the Survey.

Census.—The cost of the Eleventh Census to June 30, 1895, was $10,531,141. Of 25 volumes, with 22,000 pages, all are printed or in press, except parts of volumes on Population and Vital Statistics.

Interstate Commerce Commission.—The total number of miles of railway in the United States on June 30, 1894, was 178,708, an increase of 2,247 miles in twelve months. Miles of line per 100 square miles of territory, 6.02; per 10,000 inhabitants, 26.36. Stock capital, $4,834,075,659; funded debt, $5,356,583,019; other indebtedness, $605,815,135; total, $10,796,473,813, or $62,951 per mile. Passenger receipts in 1893–'94, $285,349,558; freight receipts, $699,490,913; other income, $231,338,131; total, $1,216,178,602. Expenditures, including fixed charges, $1,160,422,632. Number of passengers carried, 540,688,199; average number per train, 44; average journey per passenger, 26.43 miles.

NEW MAPS

Western Hemisphere Charts, published by the Hydrographic Office, United States Navy, July–December, 1895, with size, scale in inches, and price.

Great Lakes, No. 1462, Lake Ontario, Toronto Harbor, 22.6 x 27.5; M. = 3.377; $0.50. No. 1469, Lake Huron, Georgian Bay, Cabot Head to Boucher Point, 29.6 x 39.7; M. = 0.75; $1.00. No. 1475, Lake Michigan, 24.4 x 34.5; D. Lat. = 5.91; $0.75. No. 1477, Lakes Erie and Ontario, 23.4 x 23.7; D. Lat. = 5.80; $0.75. E, The Great Lakes, Index to Coast, Special and Harbor Charts, 9 x 15.2; D. Long. = 0.6; $0.10.

Mexico, No. 1494, San Ignacio Lagoon, 26.3 x 37; M. = 1.5; $0.75.

Bermuda, No. 1495, Bermuda and Great Sound, including Grassy and Port Royal Bays and Hamilton Harbor, 21 x 25.75; M. = 4.0; $0.50.

Nicaragua, No. 1510, Entrance to Pearl Cay, 16.6 x 22.6; M. = 4.0; $0.50. No. 1517, Approaches to Pearl Cay Lagoon, with plans of Great and Little Corn Islands, 24.0 x 37.4; M. = 1.0; $0.75.

Guiana, No. 1512, Corentyn River, Approaches to Nickerie River, 16.5 x 20.7; M. = 4.0; $0.25.

Guiana, No. 1513, Entrance to Corentyn River, 7.1 x 9.4; M. = 0.5, and Entrance to the Coppename and Saramacca Rivers, 7.1 x 9.4; M. = 0.25; $0.25.

Argentina, No. 1515, Port San Julian, 14.3 x 18.6; M. = 2.0; $0.25. No. 1516, Port Santa Elena, 13 x 17.5; M. = 3.0; $0.25. No. 1518, Port San Antonio, 10.2 x 13.3; M. = 1.0; $0.25. No. 1519, Rio Negro, 11.1 x 12.6; M. = 1.0; $0.25. No. 1521, San Blas Harbor, 13.1 x 14.8; M. = 1.0; $0.25.

Brazil, No. 1520, Port Camamu, 21.2 x 30.4; M. = 2.0; $0.50. No. 1522, From Bahia to Ilheos Anchorage, 28.5 x 38.8; M. = 0.25; $1.00. No. 1524, Port Tamandare, 9.7 x 11.4; M. = 4.0; $0.25.

PROCEEDINGS OF THE NATIONAL GEOGRAPHIC SOCIETY, SESSION 1895–'96

Special Meeting, October 11, 1895.—President Hubbard in the chair. Vice-President Greely delivered an address on The Sixth International Geographical Congress, London, 1895.

Special Meeting, October 25, 1895.—President Hubbard in the chair. Mr Ernest Flagg, Architect of the new Corcoran Art Gallery and of the Washington Episcopal Cathedral, read a paper, illustrated by lantern slides, on The Development of the Mediæval Cathedral.

Regular Meeting, November 1, 1895.—Vice-President Gannett in the chair. Vice-President Ogden addressed the Society, giving a narrative of explorations on the isthmus of Darien.

Special Meeting, November 8, 1895.—President Hubbard in the chair. Major Alfred F. Sears, C. E., read a paper, illustrated by lantern slides, on The Geographic Conditions that Create Great Commercial Centers.

Regular Meeting, November 15, 1895.—Vice-President Gannett in the chair. General topic: The Hydrography of the United States, divided as follows: Hydrographic Investigations, by Mr F. H. Newell, Chief Hydrographer, U. S. Geological Survey; The Work of the Weather Bureau relating to Hydrography, by Prof. W. L. Moore, Chief of the Bureau; Stream Measurements in the West, by Mr A. P. Davis; Hydrographic Studies in the Appalachian Area, by Mr C. C. Babb, and Hydrography of the Navigable Waters, by Mr Marcus Baker. Each paper was illustrated by maps and diagrams.

Special Meeting, November 22, 1895.—President Hubbard in the chair. Mr E. L. Corthell, D. Sc., C. E., read a paper, illustrated by lantern slides, on The Tehuantepec Route.

Regular Meeting, November 29, 1895.—President Hubbard in the chair. Mr Marcus Baker read a paper on Alaska and her Boundary, illustrating his remarks by a series of historical maps. The discussion that followed was participated in by Hon. J. R. Procter, Gen. A. W. Greely, and Dr W. H. Dall.

Special Meeting, December 6, 1895.—President Hubbard in the chair. Mr C. M. Ffoulke read a paper on The Tapestry-Producing Nations, and exhibited a number of typical pieces of tapestry from his valuable collection.

Regular Meeting, December 13, 1895.—Vice-President Dabney in the chair. Dr C. Hart Merriam read a paper on The Life of the Desert, with special reference to the fauna of the desert regions of the United States. Dr Merriam illustrated his remarks by means of a number of skins and of stuffed animals and birds; also by lantern slides of animals and of desert scenery.

Special Meeting, December 20, 1895.—President Hubbard in the chair. Admiral R. W. Meade, U. S. N., delivered an address, illustrated by maps and lantern slides, on The Caribbean Sea: the Mediterranean of the Western World.

ELECTIONS.—New members have been elected as follows:

October 14.—Walter C. Allen, Joseph A. Arnold, Gustav Ayres, Maj. Chas. Bendire, U. S. A., Frederick Benjamin, John H. Brickenstein, Prof. J. F. Chamberlain, Henry M. Chapman, Miss Josephine A. Clark, W. W. Cheshire, Miss Virginia E. Dade, T. H. Davies, John T. Devine, Mrs A. G. Draper, W. W. Duffield, Jr., Prof. M. J. Elrod, Maj. F. L. Evans, E. E. Ewell, Prof. D. C. Farr, Charles W. Fisher, Mrs Mary E. Gilpin, Dr Geo. O. Glavis, Capt. C. H. Gordon, U. S. A., Edward P. Hall, John H. Hinton, Miss Martha N. Hooper, Richard L. Howell, Ernest V. Janson, Thos. Kirby, Prof. F. Lamson-Scribner, John E. Lyons, J. T. Macey, Wm. J. Marsh, Mrs Cornelia N. Mason, Philip Mauro, Chief Engineer Fred. G. McKean, U. S. N., Mrs Y. W. Miller, Mrs V. A. Moore, Prof. Willis L. Moore, Dr A. C. Patterson, Daniel A. Ray, Dr E. W. Reisinger, N. H. Shea, Chas. W. Smiley, Capt. J. G. Sobral (Spanish Navy), Dr A. C. True, Dr F. W. True, Dr J. Van Rensselaer, Miss Mabel L. White, President B. L. Whitman, John C. Wilson, Hon. Wm. L. Wilson, J. W. Witten.

October 25.—Edmund Becker, Mrs Isabella M. Bittinger, Mercer D. Blondel, Eugene C. Brown, O. B. Brown, Mrs J. Mills Browne, Hon. Wm. R. Castle (Hawaiian Minister), James H. Crew, Surg. S. H. Dickson, U. S. N., Mrs Mary Fuller, S. C. Gilman, Col. A. Heger, U. S. A., Mrs Julia Henderson, E. C. Howland, Wm. A. Hungerford, Col. D. L. Huntington, U. S. A., George H. Judd, Miss Tessa L. Kelso, J. R. Marshall, Wm. H. McKnew, Mrs L. R. Messenger, Dr W. F. Morsell, Thos. Nelson Page, Miss Josephine Pickles, Mrs Fannie M. Reynolds, Rev. J. Havens Richards, S. J., Albert N. Seip, Mrs A. M. Shaw, Miss Juliet Solger, Baron Thielmann (German Ambassador), L. L. Thompson, Frank Vincent, Geo. W. Weber, H. A. Wierwille, Alonzo C. Yates.

November 8.—Chas. B. Bailey, Wm. H. Beck, B. W. Beebe, P. C. Claflin, Arthur J. Dillon, Miss J. C. Donovan, George E. Emmons, Miss Frances Graham French, Gen. L. P. Graham, U. S. A., H. A. Griswold, Miss Mamie E. Hale, Dr Theo. G. Hoech, A. B. Hoen, Dr Wm. H. Holmes, Henry M. Hubbard, F. A. Kendall, Miss Carrie M. Lash, C. R. Richards, Wm. P. Richards, C. E., Chas. J. Tilden, Heman D. Walbridge, Daniel Webster.

November 18.—Chief Justice Edward F. Bingham, Capt. G. Rodney Burt, Mr Justice Shepard, John K. Souther.

November 29.—Señor Jacobo Blanco, Prof. L. C. Glenn, Rev. Allen Hazen, Maj. W. P. Huxford, U. S. A., S. A. Moreland, Walter F. Rogers, Elmer G. Runyan, James C. Spriggs, Jr., Wm. P. Stearn, Gen. Richard Villafranca.

December 13.—Hon. C. B. Beach, M. C., Dr J. L. M. Curry, Hon. C. E. Foss, M. C., Dr E. M. Gallaudet, Baron Beno von Herman (German Embassy), W. J. Martin, Maximilien de Meck (Secretary, Russian Legation), Pak Yong Kiu (Chargé d'Affaires Korean Legation), Señor Don Edmundo J. Plaza (Mexican Legation), Dr J. L. Reeves, Rev. Prof. René de Saussure, Alexander de Somoff (Chargé d'Affaires Russian Legation).

The following delegates from THE NATIONAL GEOGRAPHIC SOCIETY attended the Sixth International Geographical Congress, held in London in July last: General A. W. Greely, Assistant Secretary of State Rockhill, Miss E. R. Scidmore, Miss Aileen Bell, Miss Lilian Hayden, Lieut. Commander W. S. Cowles, U. S. N., Lieut. Everett Hayden, U. S. N., Cyrus C. Adams, and W. C. Whittemore.

NORTH AMERICAN NOTES

The convention between the United States and Great Britain to provide the requisite topographical data to determine the boundary between Alaska and British Columbia expired by limitation December 31. Another commission will determine the location of the line.

GREENLAND. The National Geographic Society welcomes back one of its members, Engineer R. E. Peary, U. S. Navy, from his perilous and terrible journey across Greenland. If he failed to surpass his own record of 1892 he paralleled it, thus emphasizing a success far beyond that of any other explorer of the inland ice. Ethnologists look confidently for important data relative to the Etah Eskimo, and American universities have profited largely by the natural history collections.

RHODE ISLAND. According to the state census of 1895 the population of the state is 384,758, as against 304,284 in 1885 and 345,506 by the federal enumeration of 1890. Cities over 20,000 are as follows: Providence, 145,472; Pawtucket, 32,577; Woonsocket, 24,468; Newport, 21,537, and Warwick, 21,168. The drift of migration is from agricultural districts to manufacturing centers.

FLORIDA. Palm Beach, the terminus of the Florida East Coast Railway, has been created a port of entry in connection with a line of steamers, which leaving in the afternoon reach Nassau the next morning, thus opening a new route, important both to commerce and tourists.

BLOCK ISLAND. A land-locked harbor, 1,600 acres in area, has been constructed in the interior of Block island at a cost of $100,000. The channel to the Atlantic is 12 feet deep at low water and 300 feet wide, with a breakwater extending 600 feet into the sea. It is proposed to double the depth and width of the channel.

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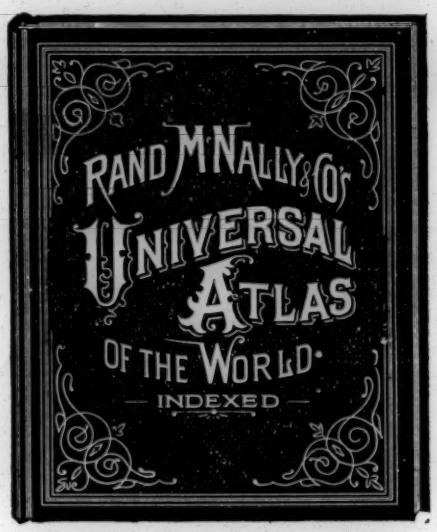

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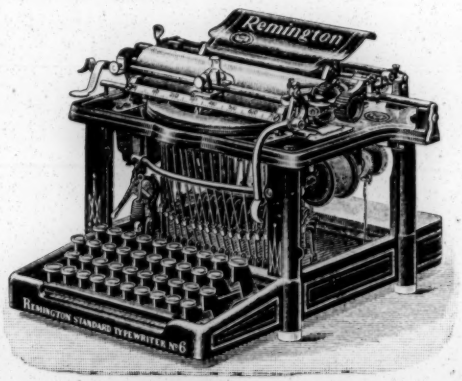

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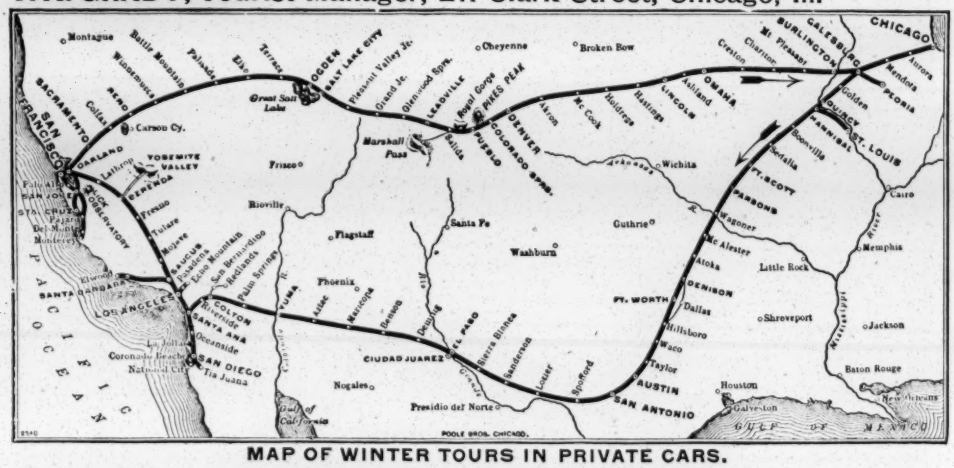

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